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THESIS

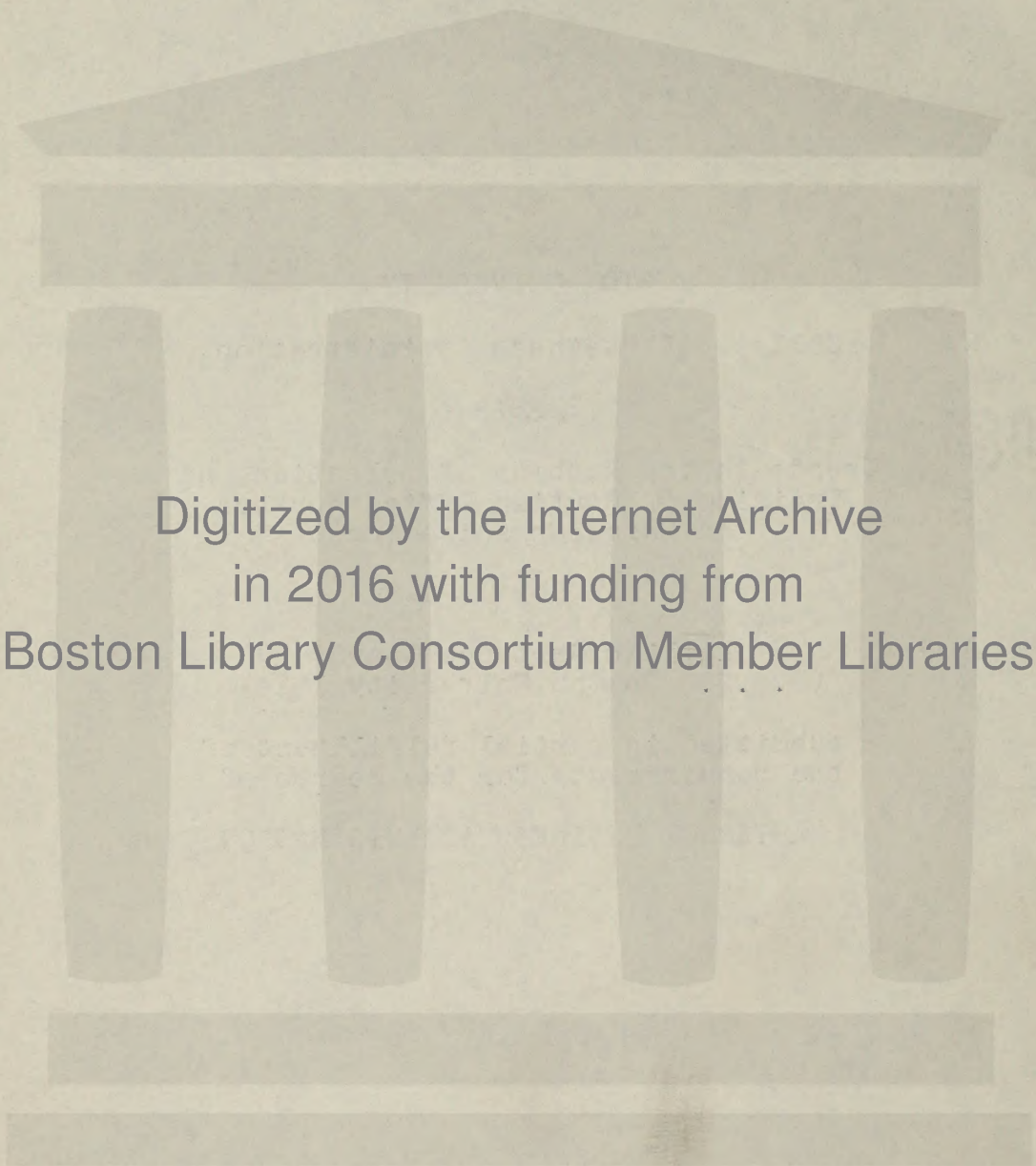
Trends in the Methods of Selection and Training of Routine Office Workers in Large Organizations

by

Lillian Gertrude Guard
(B.S.S. Boston University 1924)

submitted in partial fulfillment of
the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION



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CHAPTER I

INTRODUCTION

A. Relationship between Selection and Training and Their Place in the Personnel Program

Starting with the broadest conception of personnel administration, the basic purpose of all personnel management might be defined as the securing of maximum production effiency from the man-power involved. In industry the office worker is considered "non-productive" and this attitude, coupled with the realization that total payroll spent for the performance of routine office functions is almost negligible in comparison with the size of factory payrolls, may be a possible explanation of the fact that, in the past, less emphasis was placed upon the specific personnel problems related to the routine office worker. Business organizations, however, employing a great many clerical workers have been giving greater attention to these problems; we are indebted to certain insurance companies, in particular, for much of the research done in connection with the establishment of adequate clerical tests for personnel selection. During the past thirty years there as been a tremendous increase in so-called clerical work - this term including all of those office service functions related to communications, computation, and record keeping, which are performed by the routine office worker, so that, even in industrial organizations, the personnel problems connected with that class of worker would seem

to be of sufficient magnitude to warrant more attention from the personnel administrator. Current conditions indicate the ever-increasing importance of the routine clerical function in all large business and industrial organizations.

Definitions of "Selection" and "Training"

Since, as far as routine office jobs are concerned, selection and placement in the initial job usually take place simultaneously, the term "selection" as used herein is intended to include placement in the initial job. Training is here considered to include all education, preliminary information and indoctrination procedures aimed at assisting the worker to adjust to the office environment and to do effectively the job for which he has been selected. Considered together, selection and training are the fundamental "human relations" aspect of the entire office management function because, if carefully planned selection and training programs are successfully administered, the number of office personnel problems due to employee maladjustments will be held at a minimum.

In an analysis of the psychological aspects of the office manager's problems, Professor Forrest A. Kingsbury about fifteen years ago pointed out three outstanding factors to be considered:[1]

(1) The great differences between workers in their skills, knowledge, personal traits, attitudes, etc. make the

1. Forrest A. Kingsbury, "The Psychologist's View of the Selection-Training Problem," 1931 Conference Proceedings of the National Office Management Association, p. 42.

selection problem important and the chief requirement of it is the detection and measurement of individual differences with respect to the requirement of job satisfaction.

(2) The effectiveness of the worker depends upon many conditions, both subjective and objective. Therefore, recognition and control of these conditions which influence the worker's attitude is of great importance.[1] The external factors involve many things outside "human relations" such as environment and working conditions, also other personnel policies which are outside the scope of this study, but the recognition of the subjective conditions relating to the worker is certainly within the sphere of effective selection.

(3) Many workers who are at first unable to make effective adaptations may achieve a high degree of adjustment through learning and practice.[2] In a time like the present when the supply of young persons who are perfectly adapted to, and at the same time willing to take, routine office jobs is very inadequate to meet the needs of business and industry, it would appear worthwhile to develop training methods necessary to bring about the adjustment of those workers who must be selected from the available supply.

The human being is an "adapting organism"[3]. The process of adaption works both way, that is adapting oneself

1. Forrest A. Kingsbury, "The Psychologist's View of the Selection-Training Problem," 1931 Conference Proceedings of the National Office Management Association, p. 43.

2. Ibid., p. 44

3. Ibid., p. 43

to the environment and adapting the environment to oneself. When an employee accepts a job he or she has done so with some motive, although perhaps with reluctance; each has consented to exchange time and effort for some kind of compensation. The work environment presents a great many irritating obstacles to the new worker. The problem of the office manager, therefore, as was stated at the 1931 Annual Conference of the National Office Management Association, is "to find a sufficient number of organisms which are capable of being adjusted to your particular set of conditions so as to get the tasks done in the shortest time and with the least possible waste and error; and then to aid them in adjusting and maintaining this condition of adjustment."[1]

B. Reasons for the Current Importance of Proper Selection and Training

Comparison with other personnel problems

A survey was made in 1939[2] of the composite opinions of different groups as to the relative position of twenty-three personnel problems ranked according to their estimated effectiveness for improving personnel relations in the future. In the opinion of eighty-five personnel experts the three most

1. Forrest A. Kingsbury, op. cit., p. 41

2. Cecil A. Goode and Otis C. Trimble, "Industrial Uses for Applied Psychology," Personnel Journal, November,1939 (Vol.18, No. 5), pp. 173-176.

important problems were the following, ranked in the order indicated:

(1) Improved methods of selecting and placing workers,

(2) Better methods of supervision, and

(3) Development of better training methods.

A group of forty-one personnel administrators, requested to rank the same twenty-three problems, placed the training methods first and selection and placing methods third. Twenty-three non-personnel administrators gave first place to better supervision methods, ranking the selection problem second and better training methods fourth. Other groups also ranked the same problems with similar results; the total results of the survey pointed toward the acceptance of selection and training as being the outstanding fields for improvement.[1]

Increasing numbers in clerical occupations

If selection and training in all parts of business and industry are considered important, the fact that the numbers of persons engaged in clerical occupations has greatly increased seems to emphasize further the increasing importance of these factors in the office personnel program. The following comparison of census figures for clerical workers with total population figures indicates the relatively rapid

1. Cecil A. Goode and Otis C. Trimble, "Industrial Uses for Applied Psychology," Personnel Journal, November, 1939 (Vol.18, No.5), pp.175-176.

increase:[1]

Year	Number of Clerical Workers	Population
1870	74,291	38,558,000
1900	1,000,089 (13 times 1870)	76,000,000(99% increase)
1910	1,718,458 (71.8% increase)	91,972,000(21% increase)
1920	3,111,836 (81% increase)	105,710,000(14.9% increase)
1930	4,025,324 (30.3% increase)	122,775,000(16.1% increase)

In the 1940 Census those engaged in clerical occupations were classified with the major industrial group to which they belonged. There are, therefore, no figures for 1940 for direct comparison with the foregoing. However, it might be pointed out that in this last census the number of workers in "business occupations" was 26.4%, or over one-fourth of all workers, whereas the corresponding figure in 1930 was 19.3%, or a little under one-fifth of all workers.[2]

No figures are available to show what percentage of those classified as clerical workers are employed in large organizations, but it is reasonable to suppose that the greater increases have been in the large businesses and industries. An ever-increasing volume of government reports and the records necessary for the preparation of these reports is but one of the factors, during the past ten years particularly, which have necessitated increased office personnel in the

1. W. K. Page, "Office Equipment in the Office of Tomorrow," 1939 Conference Proceedings of the National Office Management Association, pp.94-95

2. Herbert A. Tonne, "Trends in Business Occupations 1930-1940," Journal of Business Education, March, 1944, p. 12.

increase:]

Year	Number of Clerical Workers	Population
1870	74,901	38,558,000
1900	1,000,089 (13 times 1870)	76,000,000(29% increase)
1910	1,719,469 (71.8% increase)	91,972,000(21% increase)
1920	3,111,936 (81% increase)	105,710,000(14.9% increase)
1930	4,029,864 (30.5% increase)	122,775,000(16.1% increase)

In the 1940 Census those engaged in clerical occupations were classified with the major industrial group to which they belonged. There are, therefore, no figures for 1940 for direct comparison with the foregoing. However, it might be pointed out that in this last census the number of workers in "business occupations" was 28.4%, or over one-fourth of all workers. Whereas the corresponding figure in 1930 was 19.3%, or a little under one-fifth of all workers.[2]

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J. W. K. Page, "Office Equipment in the Office of Tomorrow," 1939 Conference Proceedings of the National Office Management Association, pp. 94-95.

2. Herbert A. Toman, "Trends in Business Occupations 1930-1940," Journal of Business Education, March, 1944, p. 1.

larger corporations.

Effect of mechanization

It should be noted, also, that the greater mechanization of office work has greatly increased the number of workers. The "labor-saving" equipment has increased rather than decreased the amount of routine work. In other words, office machines have made possible so much more extensive statistical analyses and reports of all phases of business operation than would have ever been possible by hand methods, that more employees are required. For instance many large corporations have daily balances of every item in the inventory, sometimes consolidating these reports from different branches in one report for the entire company; without machine methods such an undertaking would be practically impossible.

Because of the great division of labor with its inevitable specialization, the technical changes accompanying the mechanization of office work have to a large extent, influenced the type of worker required. For example, the old-time bookkeeper who did a whole bookkeeping job is no longer needed in the large corporation. Accounts are broken down into small units, each involving entries of a similar nature which can be handled by a single worker who can perform this work repetitively with no necessity for understanding the procedure in its entirety. We have accounts receivable clerks using machines that add and subtract with absolute accuracy; there are other machines adapted to every phase of

accounting and to tabulating and statistical work.[1] In like manner most of the secretaries who in the past performed different tasks for one executive, have now been replaced to a great extent in the large corporations by machine transcribers for dictation, by centralized filing departments, by centralized calculating departments -- in other words, specialization is required of the routine worker.

While machines have taken the "drudgery" out of such work as adding long lists of figures, they have caused most jobs to become more repetitive and routine. Some machines have created new jobs such as duplicating machine operators, key punch operators, and so forth, all of which tend toward specialization and repetitive work. With this trend toward specialization, it would seem that methods of selection for the different kinds of office jobs should be more carefully studied.

Importance to the individual of proper selection and training

From the point of view of advantage to the individual employee, proper selection procedures often prevent an unwise choice of occupation. Apparently not all young people attempt to make, or are successful in making, the correct occupational selection as indicated by their later "occupational

1. W. K. Page, "Office Equipment in the Office of Tomorrow" 1939 Conference Proceedings of the National Office Management Association, p. 96.

contentment."[1] Results of a survey made by Fortune magazine in answer to the question, "If you could go back to the age of 18 and start life over again would you choose a different career or occupation?" are tabulated as follows:

	Total	Age 20-40	Age Over 40	Men	Women
Yes - different career	41.0%	39.0%	43.0%	44.8%	37.8%
No	39.2	40.3	37.9	37.9	43.5
Depends on circumstances	15.2	15.9	14.6	15.9	14.6
Don't know	4.6	4.8	4.5	4.4	4.9

"Occupational contentment" can be as equally dependent upon proper job training in the initial job as upon selection of the right person for the job. A well-qualified applicant may build up interest in a job through the satisfaction he or she attains from the applying of training information to the job situation, while the feeling of inadequacy developed in the worker due to incomplete or incorrect instruction may result in even the best qualified employee becoming disinterested and careless.

Importance to the employer of proper selection and training

The advantages to the employer of having carefully selected and properly trained employees are so obvious that any attempt to enumerate them seems unnecessary. All employers are well aware of the increased efficiency and savings in cost which result from successfully operating selection and training

1. Harold R. Bixler, "Personnel Problems During Reconversion," 1945 Conference Proceedings of the National Office Management Association, p. 31.

programs. If, as some economists predict, it is going to be necessary for big business to operate on narrower gross profit margins in the future, attention to effecting savings in the service functions of the business will be most essential. Since such "savings" in cost cannot come through decreased clerical salaries under present labor conditions, they must be achieved by other means, the most obvious of which is by increasing efficiency.

C. "Routine" versus "Variety" Worker

Graduates from the commercial high school course or from special business schools who go into office jobs have to decide between two classes or types of jobs. Either they take a "variety" job in a small office, which requires duties covering all phases of office work, or they take a "routine" job in a large business organization where increased specialization of task has taken, or is constantly taking, place. The large percentage of these employees are girls, many of whom regard the job as merely something to do between completing school and getting married; this being the case, they are interested merely in doing something which causes them as little inconvenience as possible and provides them with as much income as is obtainable. Employers recognize the risk of short-term employment involved in hiring girls just out of school, but it is the opinion of the writer that they do not fully appreciate the value of careful selection and placement even though this type of employee

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may last only from one month to three years. Since the small-office employer is less willing to risk the rapid turnover and usually prefers a girl with a few years' experience, the girl just out of school is quite likely to drift into the large business office and be placed in any job which happens to be open at the moment, whether or not she is at all adaptable to the particular kind of routine involved.

The girl who is career-minded may choose a large organization, lured by the chances for advancement and promise of ultimate financial reward in excess of what the small office can offer. With ambition for a motive, this type of worker may function very efficiently on any initial routine job, but if advancement does not materialize, or if the employment manager has over-sold the job, she will eventually either leave the company or become a dissatisfied and inefficient "hanger-on". Hence the importance, in selection, of determining first, whether the girl is adaptable to a routine office job, and secondly, to what kind of a routine she will adapt.

At the 1933 Conference of the National Office Management Association, one of the subjects for discussion was the number of office employees needed in the different groups, i.e. jobs requiring "better and brighter" minds in comparison to the proportion of jobs open to the strictly routine workers who do accurately what they are told to do. A representative of Proctor and Gamble made the statement

that "The conclusion we have come to is that there is a smaller and smaller percentage of employees needed in the average group; a larger percentage in the below average group, if you wish to call it that, or the routine workers."[1]

Since we are considering herein the routine office worker, an attempt is made in the following pages to confine the analyses as far as possible to those methods which are distinctly related to selection and training of this class of worker.

1. 1933 Conference Proceedings of the National Office Management Association, p. 74.

CHAPTER II

SELECTION TECHNIQUES

The selection techniques used in the hiring of office workers are the same as those used for all types of workers and the underlying principles, aimed at getting the right worker into the right job, apply in the office situation as well as in the factory or shop. There is, however, a greater variation in the mental and physical requirements of office jobs than in similar jobs in any other occupation.

The value of proper selection and placement is found in at least six factors: (1) the reduction of labor turnover with its consequent wastes,(2) the general increase in efficiency of the organization,(3) savings resulting from paying only what the employee is worth to the company, (4) readjustment of misplaced employees enabling them to yield larger returns on their cost, (5) economies resulting from reduction of special training courses for a large number of new workers, and (6) the intangible advantages which invariably result from a working force which is contented because it is well placed.[1] In the case of the office worker the last factor is of perhaps greater importance than in industrial work because, since office work involves greater mental concentration, the quantity and quality of the output is more likely to be affected by the attitude and contentment

1. Gordon S. Watkins and Paul A. Dodd, The Management of Labor Relations (New York, McGraw-Hill Book Company, 1938), p. 168.

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1. Gordon B. Watkins and Paul A. Dodd, The Management of Labor Relations (New York, McGraw-Hill Book Company, 1938), p. 168.

of the worker than is the output in a factory job. While the cost of training for some routine office jobs may not be as great as the cost of training a factory worker, there is apt to be a slowing up of the whole routine with a temporary loss in efficiency of other workers involved in the same routine when a new worker is being initiated; in the factory, where the attitude of employees toward each other is inclined to be less personal, this slowing up is not usually as apparent. This and many other of the psychological affects of labor turnover and personnel transfers provide adequate argument for a selection procedure which keeps labor turnover and undue shifts and transfers at a minimum.

Before considering the specific techniques of selection it seems appropriate to mention the sources of recruitment of office personnel. While all sources of labor are available for securing this class of worker, there are four which seem to be of particular importance at present for this type of employee for routine office work: (1) secondary schools (especially those which have well developed commercial courses), (2) training schools maintained and conducted by the manufacturers of office equipment,[1] (3) private business schools and colleges, and (4) reputable

1. In Chapters IV and V, infra, which deal with pre-employment training, there is detailed discussion of the progress made in secondary school commercial training and also of the contributions to specialized office education made by the manufacturers of office machinery, which makes these schools increasingly important as sources of recruitment of routine office workers.

private employment agencies. Especially those private agencies which are limited to a special class of worker can be of considerable assistance since they depend for their survival upon the quality of those they recommend and are therefore much more likely to give individual attention both to the candidate and to the nature and conditions of the job.[1]

The public employment office seems to be used less for office employees than as a source for other workers. A survey made in May 1946 of clerical employees hired during the preceding six months in twenty fairly large organizations (including banks, insurance companies, department stores, flour processing companies, manufacturing concerns and public utilities) revealed some interesting facts concerning the attitude of clerical job seekers toward the Public, Private and Company employment agencies.[2] The total number of questionnaires returned was 284 (244 women and 40 men workers); of this total the sources of present jobs held were:-

Public Employment Office 7%
Private Agency 18%
Company Employment Department 75%.

However, the job seeking experience as reported by this same group was:-

Public Employment Office 58%
Private Agency 53%
Company Employment Department 93%

1. Herbert Moore, Psychology for Business and Industry, (New York, McGraw-Hill Book Company, 1942), p.61.

2. Philip H. Kriedt and Donald G. Paterson(University of Minnesota), "Reception of Clerical Job Seekers," Personnel Journal, January, 1947 (Vol.25, No.7) pp.236-241.

Without enumerating the replies to specific questions on the questionnaire, the chief conclusions drawn from this survey were that 52% believe that company employment departments afford the best opportunity for getting work; 34% believe the private agency is best and only 8% believe that the public employment agency is best. The services of the public employment office were subject to much more adverse criticism than the other two.[1]

The cases used in this survey, while representative of different types of large business organizations, were, however, limited to one city and therefore may not be indicative of the general status of the United States Employment Service, but at the present time it seems probable that the public employment office is not as active in the placement of clerical workers as are private agencies.

As an indication of the attitude of the large companies toward recruitment sources, a survey in 1935 of the personnel practices of 254 companies, employing 202,922 office workers, showed that 51% of these companies used employment agencies, and 51% of them sought new employees by direct contact with schools and colleges.[2]

1. Philip H. Kriedt and Donald G. Paterson (University of Minnesota) "Reception of Clerical Job Seekers," Personnel Journal, January, 1947 (Vol.25, No.7), p. 241.

2. W. H. Evans, "Current Personnel Practices," 1935 Conference Proceedings of the National Office Management Association, p. 35.

A. The Interview

The personal interview has always been the fundamental and most commonly used selection technique. Much has been written in all personnel textbooks concerning the interview. The authors seem quite generally agreed on the purpose of the interview being primarily to gain the necessary information with respect to the applicant, to inform the applicant of the exact requirements of the job to be filled, and to create the good will of the applicant toward the company. Many separate treatises have been written on the subject by psychologists and by personnel experts, and there is no doubt that a careful reading of many of these would be of great value to anyone engaged in employment interviewing.

1. Qualifications of the Interviewer

"The interviewer, himself, is the most important element in the entire employment situation." This statement is made in a very adequate summary discussion of the interview written by Dr. V. V. Anderson, who at the time of writing it was Director of Employment Placement and Personnel Research for R. H. Macy & Co.,Inc. Only the training, knowledge and experience of the interviewer can give him the background for understanding the personality of the applicant and to accurately estimate the applicant's possibilities of

1. V. V. Anderson, "The Employment Interview" in Handbook of Business Administration(New York, McGraw-Hill Book Company, 1931), p. 1079.

adaptation to the job. While tests are valuable aids which can help the interviewer obtain knowledge of a given applicant's abilities, such essential characteristics as responsiveness, convincingness, aggressiveness, self-confidence, self-consciousness, nervousness, poise, patience, attitudes toward home, work and environmental conditions, can be judged only by means of the personal interview since they are not subject to test. That the interviewer must be without bias and possess a pleasing and approachable personality, as well as tact, diplomacy, and a real interest in people himself, is stressed by all authors with respect to the personal requirements of the interviewer.

In connection with hiring routine office workers in particular Dr. Anderson brings out the desirability that the interviewer have a detailed knowledge of the job to be filled if he is to predict the possible success or failure of a given applicant.

> Even such seemingly like jobs as those included under the general head of clerical work present problems in the individual fitness which the interviewer cannot meet unless he has at hand a thorough analysis of the job and has incorporated this into his employment technique. Not only do the details of the work vary but the environment, the type of supervision, degree of concentration, amount of variation within the job itself, etc. all are different, sometimes within a limited section.[1]

1. V. V. Anderson, "The Employment Interview," in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p. 1081.

While well written job specifications outline the detailed job requirements, they often fail to reveal, especially in the case of office jobs, the real nature of the work, so that actual contact of the interviewer with all conditions surrounding the job as well as a general knowledge of the routines in the department are of extreme importance. In the opinion of the writer this is one of the most significant points to be considered in the hiring of routine office workers. The failure of the interviewer to accurately present the requirements of the job to the applicant frequently lead to misunderstanding and discontent in the early stages of employment. However, in large organizations this is not an easy obstacle to overcome because of the fact that a good employment interviewer may have to deal with applicants for many types of jobs throughout the company, and often does not have time to personally investigate each set of conditions existing in every department. Even in cases where the procedure calls for having the applicant finally interviewed by the supervisor of the department in which she is to work, this matter is apt to be overlooked because the supervisor assumes that the employment interviewer has covered the details of the situation and regards the final interview as merely a personality check.[1] However, since the supervisor is not presumed

1. The reason for the interview with the supervisor is the feeling that she should not be forced to accept any candidate sight unseen; if the supervisor likes the candidate the probability of successful hiring is increased.

to be a trained interviewer in most cases, responsibility for final selection of the applicant rests entirely with the employment interviewer. Job analyses and specifications have done much to aid the interviewer, but there still remains the necessity for him to obtain, by whatever means is feasible in the particular situation, a first-hand knowledge and understanding of the exact nature of the job, in order to assure himself of the suitability of the candidate and to make clear to the candidate the exact requirements of the job.

2. Specific Facts to be Covered

At the same time that the interviewer is forming an opinion of the applicant's personal fitness for the specific job, there are certain definite factors which experience has shown should be covered in the interview. These are (1) the personal history of the applicant - developmental, health, educational and work, (2) a personality study, and (3) home problems.[1]

Carefully planned questions applied with tact can bring forth the applicant's personal history and home problems, and the significance of these in relation to the employability of the person is in most cases apparent. The personality study, however, is indirect since the interviewer

1. V. V. Anderson, "The Employment Interview" in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p. 1082.

must interpret the significance of the individual's own account of how she has met and dealt with different situations. This does not mean a self-estimate by the individual since forms for this sort of self-analysis have been proven quite unsatisfactory.

> ...the personal history, when taken directly by the thoroughly-trained investigator, brings to the surface motives, attitudes and characteristic traits of the personality that undeniably act as the driving forces in behavior.[1]

It is apparent that the interviewer should have a thorough foundation in general and social psychology, personality study, and mental hygiene literature as a background, and "the better acquainted he is with the clinical case method of study, the greater his diagnostic ability is likely to be."[2]

3. Scientific Approach to the Interview

Robert N. McMurry[3] stated as reasons for considering the interview method unscientific (1) the average interviewer has not known just what kinds of questions to ask,

1. V. V. Anderson, "The Employment Interview" in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p. 1084

2. Ibid., p. 1084

3. Robert N. McMurry, who is a Professor of Psychology, is an Associate Director of The Psychological Corporation, Chicago, Illinois. His work consists for the most part in developing personnel programs and procedures for business and industrial organizations. Companies he has worked with include Allis-Chalmers Co., Studebaker Corp., Swift & Co., Wilson & Co., and Owen Illinois Glass Company.

(2) has not known how to interpret replies and impressions, and (3) no one is capable of complete objectivity.[1] As a scientific approach to improvement he suggests the following four steps: (1) a study of the job to determine the personality types which would be successful by interviewing successful and unsuccessful people on similar jobs, (2) the development of the interview procedure covering five definite areas: work history, schooling, home environment as a child, present home situation, and health, (3) in selection of interviewers, the elimination of people with prejudices or personality defects, giving preference to those without experience because erroneous preconceived ideas are sometimes impossible to train out, (4) training the interviewer (15-20 hours of instruction). This training, it is suggested, should cover study of the personality types which will be encountered, individual training in the conduct of the interview by observing an interview with an actual applicant and participation in interpretation of findings, and followed by the trainee conducting interviews under supervision and making his own interpretation under the guidance of the instructor.[2]

All personnel literature having to do with interviewing shows a decided trend toward the scientific approach to this subject. In fact, arbitrary rules have been laid down

1. Robert N. McMurry, "Improving Interview Techniques" Office Management Series, No. 97 (New York, American Management Association, 1942), p. 3.

2. Ibid., p. 4.

and specific questions formulated to be used as guides in conducting the interview. A study of these can provide a definite plan and procedure. E. F. Wonderlic has accomplished a great deal in the line of scientific planning and has written much which seems constructive. He divides the interview into three types: (1) introductory, with factual information in regard to the applicant's age, education, etc. and a casual inspection of his work history; (2) the placement interview in which the new employee is acquainted with the specific conditions of his job; and (3) the selection interview, during which the final decision on the prospective employee is made.[1] As a selection device, he claims the interview is helpful in determining the following characteristics: (1) verbal facility, (2) personality (the reaction of the applicant to the interviewer), (3) attitudes (toward previous employers, toward education, supervision, etc.) and (4) physical appearance.[2]

Studies are still being made to develop so-called pattern interviewing plans which can be scientifically applied to the employment field. Work is now in progress on the itemized analysis of individual questionnaires which will weight the questions in accordance with their discriminative value.[3]

1. E. F. Wonderlic, "Interviewing," in How to Train Workers for War Industries, (New York, Harper and Brothers, 1942), p. 166.
2. Ibid., p. 167.
3. Ibid., p. 170.

4. Reliability of the Interview

A research program was undertaken by the Industrial Relations Association of Philadelphia, the two definite objectives of which were (1) to contribute to existing information on the reliability of the employment interview, and (2) to develop a practical method for training interviewers.[1] This program was undertaken because of the conviction of those concerned that, although the interview was the most widely used selection technique, it had been least subjected to controlled experimentation. The method followed in conducting the experiments was to have members of the committee (composed of ten trained psychologists) "sit in" on an interview by means of an adjoining room so arranged that the applicant was unaware of its existence; the interviewer was one selected from the committee. Since the committee members were able to both see and hear what went on they could record their own impressions as the interview progressed and afterwards compare results with each other. The consensus of opinion of the committee as a result of these experiments was that the qualities which could be accurately judged in the interview are (1) appearance, (2) ability to learn, (3) judgment, (4) self-confidence, (5) tact, and (6) cooperation.[2]

1. R. S. Driver, "Research in the Interview," Office Management Series No. 102 (New York, American Management Association, 1944), p. 20.

2. Ibid., pp. 22-31.

Criticisms of the reliability of the interview have always been numerous but in such criticism there is usually failure to recognize that when used for elimination of particularly poor or selecting particularly good applicants, agreement among several interviewers approaches 100%. It is when selecting a border-line candidate that the disagreement of interviewers concerning the same candidate becomes apparent.

Wonderlic states in this connection:-

> Statistical studies of interviewing have never taken into consideration the fact that the applicants range from hopeless to the most successful. Restricting the range of degrees of success limits the statistical methodology just as it does when psychological tests are subjected to the same rigorous conditions.
>
> Writers in the personnel field have been too prone to condemn the interview as worthless. Its potential value is in fact a great deal more than the psychological measures. This does not mean that the use or study of psychological devices should be discontinued. Used properly tests can save the time of the interviewer by culling out possible misfits at a low cost per applicant. But while the last decade has brought forth numerous aids to interviewing nothing has yet appeared which displaces it.[1]

B. The Application Blank

Requiring the applicant to fill out some kind of an application blank is as universally accepted as part of the selection procedure as the personal interview. In hiring

1. E. F. Wonderlic, "Interviewing," in How to Train Workers for War Industries (New York, Harper and Brothers, 1942), p. 173.

clerical employees, especially, it is probably never omitted by any large company. Among the many reasons for its constant use the following are probably the most outstanding.

(a) If properly designed it is a good testing device.

(b) The handwriting and spelling are subject to immediate judgment (this might serve as a basis for immediate elimination of some clerical applicants)

(c) The time taken by the applicant to fill out the form might be some indication of clerical ability.

(d) The time while the applicant is waiting for an interview may be utilized for this purpose.

(e) If circumstances permit the interviewer may observe the applicant while he is filling out the form.

(f) Information furnished on the form gives the interviewer a basis from which to start.

(g) To certain types of questions the applicant may give more intelligent replies if he studies them and writes the answers rather than answering verbal inquiries.[1]

1. Information asked for

Application forms vary so greatly with respect to the details required that it would be impossible to classify them into any general types. Each company devises its own form, guided by a consideration of the kinds of jobs to be filled and the detailed information required from the blank for use in the personnel records. In order to avoid a

1. Herbert Moore, Psychology for Business and Industry (New York, McGraw-Hill Book Company, 1942), p. 70.

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lengthy application blank some companies use a preliminary form, which includes only the most essential information upon which it can be determined whether the applicant should be considered a possible candidate for the job. Only those seriously considered then fill out the complete form, which will in many cases include all the data needed by the personnel department for records if the candidate is hired. Other companies do not include all this data on the application blank but obtain it after the applicant is hired even though this frequently involves duplicating information already furnished on the application form.

Regardless of the kind of business or industry, most application forms cover the following facts:

Name of company
Date of application
Applicant's name, address and phone number
Date and place of birth
Marital status and dependents
Physical traits (height, weight, etc.)
Position applied for or desired
Educational training, usually including names of schools, years attended, and date of graduation.
Foreign languages
Business experience, including names and addresses of previous employers, nature of work performed, and dates employed.
Personal references
Outside or particular interests, including club memberships.

It has been in the past quite usual for such forms to also include questions as to origin, race and sometimes religious affiliation. Legislation in some states may make inclusion of such questions inadvisable. In Massachusetts, since the

passage of the Fair Employment Practice Law in 1946, all questions relating to national origin , race, and religion have been omitted from application forms.

Many studies were made twenty-five to thirty years ago to determine the value of different items of personal information concerning the applicant as related to different types of jobs. Herbert Moore recommends investigations to weight the importance of each factor (weights established by comparison with successful workers on each kind of job) in the application blank in any organization in which there is a fairly large personnel doing one kind of work, especially if there is a long training period and a correspondingly high hiring cost. Although he admits the possibility that this may not be justified in some industrial positions, he makes the following statement:-

> In offices and sales departments, however, an investigation of this kind should result in a lower labor turnover and a more satisfactory force. For all positions there are desirable factors that the application blank should disclose, factors that job studies reveal and that can be used as a selective tool, thus eliminating many whom tests and interviews later discover to be unpromising. For example most positions have a favorable age range, a definite type of training as a prerequisite, and are held in a particular organization by a group within a specific educational range. These, and other delimiting factors peculiar to the situation, the application should disclose.[1]

1. Herbert Moore, Psychology for Business and Industry(New York, McGraw-Hill Book Company, 1942), p. 79.

Each company, in developing its application form, undoubtedly aims at eliminating all data which is not used or which is superfluous. However, since the same form necessarily is used for several different types of jobs there is usually some information included which is not necessary for all cases. As an example of some detailed questions asked, the form used by Sears, Roebuck and Company for all employees (clerical, sales, shipping and packing room, etc.) includes, in addition to the usual questions such as those listed on page 31, the following personal data:

> Are you right or left-handed? Color of hair? Wear glasses? What serious illness have you had? Give details and date..
> What serious accidents or operations have you had? Have you ever had tuberculosis? Are you disfigured in any way? Vaccinated? What physical defects or ailments do you now have such as hernia, heart trouble, kidney trouble, or high blood pressure?[1]

Other family questions asked on this form are:

> Father's Occupation? How long has your father held present position?
> Have you a relative in the employ of Sears?
> If so, give name and relationship? Store Dept. No...
> Have you any financial obligations? If so, what amounts?
> If someone advised you to seek employment here, give name. ..
> Have you ever made application for a bond which was refused?
> How much life insurance do you carry?[1]

1. Questions taken from "Application for Employment" form of Sears, Roebuck and Company (Boston) Rev. 11-1-45.

The educational information required by the Sears' form includes "average grades" for each school course. The form requires five "References" and specifies that these references must be former employers if possible, arranged in reverse chronological order. Provision is made for the following specific information in regard to each one of these employer references:

Employer's Business
Under whom did you work?
Nature of work?
Date beginning - month and year
Earning when beginning . .
Date of leaving . .
Earning when leaving. .
Why did you leave? Give details . .

Between each section of the form set aside for the above detail is a line on which the length of inactivity and reason therefor must be stated.

An application form such as this certainly omits nothing from the complete chronological history of the applicant's education and business career.

2. Relationship to the Interview

Since the questions asked on the application blank and the general procedure and plan of the interview are distinctly related, in order to avoid duplication it would appear reasonable to simultaneously consider the planning of the application blank and the building up of the interview procedure. For example, if the interviewer asks specific questions already answered by the applicant on the application

form, the effect on the applicant is likely to be unfavorable. It would seem preferable to omit from the blank questions which may be dealt with in the interview (and include these on the interviewer's check sheet if one is used), rather than run the risk of the annoyance of the applicant at seeming repetition, which may lead him to feel that the interviewer is disinterested or inattentive. The interviewer, having read the application, may, if necessary, request supplementary information concerning any item, provided he phrases his question in such a way as to inform the applicant that he has noted what was written on the application form.

C. The Use of References

Although the time-honored method of selecting employees on the basis of general or special letters of recommendation is still in use, there has been for many years a distinct trend in business toward distrust of the letter of recommendation.[1] In considering the question of references it is well to distinguish between the two types of references used in hiring: the employment reference and the personal reference:

> An employment reference is a statement of facts given upon request by a previous employer and should be based on the employment record of the

1. Earl B. Morgan, "Ethics and Methods in Handling References," in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p. 1099.

> subject, covering such items as period of service, occupation, wage, reason for leaving, rating on workmanship, attendance, and conduct.[1]

Such a reference is not intended to predict the suitability of the candidate for the new position but is simply a statement of performance on a previous job.

> A personal reference is an opinion given upon request by a person named by the subject as being qualified to give it, covering character, integrity, general standing in the community, and should be based on either social or business acquaintance, or both.[2]

Frequently the two kinds of data are requested from the same source, which apparently is not a wise procedure because the previous employer is apt to know nothing of the person's standing in the community or personal integrity, and conversely, the social acquaintance may know absolutely nothing concerning the applicant's business ability.

1. Weaknesses of Recommendations

Recommendations may come to the employment manager in one of three ways: (1) an open letter of recommendation brought by the applicant, (2) a letter from the past employer to the prospective employer, written at the request of the applicant, and (3) a letter or completed form from the past employer to the prospective employer written upon specific

1. Earl B. Morgan, op, cit., p. 1099.

2. Ibid., p. 1100.

request of the latter. The weaknesses of the first two are apparent, since the first is usually merely a brief statement that the employee has given satisfactory service and is leaving of his own volition or for some other reason. If it contained anything derogatory, the applicant would not present it, and therefore it is of little value. The second type, a letter written at the request of the employee is practically certain to be complimentary and may in no way be related to the type of work the applicant seeks.[1]

2. Necessity of Evaluating the Source

The third form of reference may or may not have real value depending upon the discriminating ability of the writer and adequacy of his records, or upon the care and honesty with which he may answer definite questions. There are still certain obvious conditions which should be pointed out as affecting the accuracy and reliability of this source of information. First, the person who writes the letter, if unwilling to prevent the employment of the individual, is seldom wholly honest in his estimate. Secondly, even with good personnel records to which reference is made, there is the danger of inaccuracy existing in those records due to prejudice on the part of some former supervisor who might have given the individual an undeserved uncomplimentary rating.

1. Herbert Moore, Psychology for Business and Industry (New York, McGraw-Hill Book Company, 1942) p. 80.

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1. Herbert Moore, Psychology for Business and Industry (New York, McGraw-Hill Book Company, 1942) p. 80.

Because of these weaknesses it is always necessary for the representative of the prospective employer to carefully evaluate every source of letters of recommendation from previous employers.

The weaknesses in letters of recommendation from individuals other than employers are, first, the tendency of the applicant to list only the names of persons who will be likely to give him favorable endorsement; second, the fact of human sympathy which tends to make the writer of the letter, especially if a personal friend, want to see the applicant get work; and third, the fact that even if the writer is not too much prejudiced in favor of the applicant, he may know little or nothing about his ability and may be acquainted with him only in a general social way.[1]

3. Suggestion as to Best Method of Obtaining Recommendations

From the foregoing it would appear that the best source of information in regard to the applicant is the previous employer, and that the best method is to make specific inquiries in the form of a check list or questionnaire. The questions asked would, of course, vary, as they should be related to the job for which the applicant is being considered; they should as far as possible call for factual statements instead of opinions. Moore gives a very

1. Gordon S. Watkins and Paul A. Dodd, The Management of Labor Relations (New York, McGraw-Hill Book Company, 1938), p. 179

good illustration of this type of inquiry which is patterned after suggestions given by Burtt, and by Bingham and Freyd, who have written extensively on the subject of employment psychology. A brief letter in which the previous employer is requested to answer specific questions on "the reverse side of the sheet" ends with the following words:

> You realize that it will be to _____'s disadvantage to be appointed to this position if he is not fitted to fill it. We shall appreciate prompt and thoughtful attention to the questions, and assure you of cooperation in similar efforts on your part.

The questions given on the reverse side of the sheet read, in part, as follows:

> 1._____states that he was in your employ from_____to_____as_____.
> Does this correspond with your record? Yes( ) No( )
>
> 2. He states that he left because (reason as given by applicant for leaving)
> Is this an adequate statement? Yes( ) No( )
> If not, why did he leave? Discharged?( )
> Poor worker?( ), Unreliable ( ) Irresponsible( )
> No work ( )
>
> 3. He states that when he left you his salary was ($ per week). Is this correct? Yes( ) No( )
>
> 4. Was he always honest in financial dealings?
> Yes ( ) No ( )
>
> 5. Would you be willing to re-employ him?
> Yes ( ) No ( )
>
> 6. Did he have any habits to which you objected?
> Yes ( ) No ( ) If so, please state them.
>
> 7. Will you rate him on each of the following seven qualities:
> (a) Powers of application Exceptionally industrious( ), Industrious( ), Performs work assigned( ), Shiftless( ), Lazy( ).

(b) Work habits Very persistent( ), Determined( ), Ordinary( ), Easily discouraged( ), A quitter( ).[1]

(c)...

There is little doubt that a definite questionnaire of this sort will bring out much more helpful information than will a general inquiry which usually results in a letter from the previous employer, which in most cases has been found to emphasize and dwell upon the favorable characteristics of the individual being considered. Of course, care must be exercised in choosing qualities to be rated which are pertinent to the job, and in selecting adjectives (for checking) not subject to misinterpretation.

With respect to general references, Dr. F. E. Walsh in a paper read before the National Office Management Association in 1939, made the following statement:

> General references are usually of little value for they are selected by the applicant who will naturally list only persons who can be relied upon to give him a favorable recommendation.[2]

It would seem, therefore, that the greatest value of references lies in their use as a check on factual statements made by the applicant, and as a rating of the applicant's qualifications on a questionnaire type of inquiry provided the previous employer is one who can be relied upon to give accurate estimates.

1. Herbert Moore, Psychology for Business and Industry (New York, McGraw-Hill Book Company, 1942), p. 83.

2. 1939 Conference Proceedings of the National Office Management Association, p. 24.

CHAPTER III

SELECTION TECHNIQUES (Continued)

A. Tests Used for Selection

Tests as a selection technique in industry have been in the process of development for over a quarter of a century, during which time their value has been the subject of constant debate. There have been wide variations in the claims for success or failure of psychological tests and of all kinds of tests of ability; but the fact remains that they are being adopted today in both business and industry, "in a questioning mood but with ever-increasing approval."[1]

It would be impossible to ascertain exactly how many workers are selected by the test method because statements as to the extent of their use seem to be colored by the favorable or unfavorable attitude of the authors toward testing programs. With respect to their testing programs, of 254 companies, employing 202,922 office workers, surveyed in 1935, 55% indicated that they used selection tests as a basis for employment. However, only 7% of this number indicated that they used the "test method" exclusively, the other 93% using tests to a limited extent.[2]

1. Herbert Moore, Psychology for Business and Industry (New York, McGraw-Hill Book Company, 1942) p. 106.

2. W. H. Evans, "Current Personnel Practices," 1935 Conference Proceedings of the National Office Management Association, p. 35.

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It would be impossible to ascertain exactly how many workers are selected by the test method because statements as to the extent of their use seem to be colored by the favorable or unfavorable attitude of the authors toward testing programs. With respect to their testing programs, of 254 companies, employing 502,982 office workers, surveyed in 1956, 58% indicated that they used selection tests as a basis for employment. However, only 7% of this number indicated that they used the "test method" exclusively, the other 93% using tests to a limited extent.[2]

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1. Herbert Moore, Psychology for Business and Industry (New York, McGraw-Hill Book Company, 1942) p. 108.

2. W. H. Evans, "Current Personnel Practices," 1956 Conference Proceedings of the National Office Management Association, p. 58.

A report of the National Industrial Conference Board issued in March 1936 covering 2452 manufacturing and commercial organizations with a total of 4½ million employees shows that only 141 or 5.8% were giving tests to clerical workers. The percentage was somewhat larger for non-manufacturing than for manufacturing groups - about 15% in the case of the former. Insurance companies were the most active in the field, with about 50% of them using tests for clerical workers.[1]

At the 1939 meeting of the National Office Management Association questions answered by thirty-five representatives of different firms indidated that one-half of the firms represented gave pre-employment tests, and that out of this number only six gave their own tests instead of standardized tests.[2]

In 1946 the following question was included on a questionnaire answered by 284 recently hired clerical workers in large business and industrial organizations in a large city: "Did the agency or office which got you your present job administer any tests to you?" The total number was divided into three groups with respect to the source through

1. Morris S. Viteles, "What's New in Methods for Selecting Office Workers," Office Management Series No.75 (New York, American Management Association, 1936), p. 8.

2. 1939 Conference Proceedings of the National Office Management Association, p. 28.

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1. Morris S. Viteles, "What's New in Methods for Selecting Office Workers," Office Management Series No. 79 (New York: American Management Association, 1939), p. 6.

2. 1939 Conference Proceedings of the National Office Management Association, p. 98.

which they had obtained their present jobs. Of the 51 who had obtained their jobs through private agencies, 21% had taken tests; of the 19 who had been placed by public employment offices, 38% had taken tests: and the largest group, 203, who had been hired directly by company employment offices, 60% had taken tests.[1]

In an article written in 1946, Richard S. Schultz points out the boom in personnel testing activities which took place during the depression years of the 1930's. Given impetus by the institutions which were set up for analyzing characteristics of the unemployed, the W.P.A. and N.Y.A. undertook testing programs; about 1934 the United States Government supported an occupational research program which helped stimulate the sounder use of personnel testing. With the advent of World War II increased interest in testing came out of the government testing of 15 million men and women in the armed services, which widely applied all testing techniques.

> The scientific foundation of personnel testing has been cautiously and meticulously established... The personnel testing technique is the one, some are inclined to say the only one, scientific tool of human relations.[2]

The United States Civil Service Commission took the lead in using tests for selection. From 1883 they gave

1. Philip H. Kriedt and Donald G. Paterson, "Reception of Clerical Job Seekers," Personnel Journal, January 1947, (Vol.25, No.7), p. 239-240.

2. Richard S. Schultz, "How to Use Personnel Tests," Personnel Journal, September, 1946(Vol.25, No.3), pp. 95.

tests in school subjects as arithmetic, spelling, composition, penmanship and grammar. This method proving inefficient, they resorted to tests involving the essay type of question but this was found difficult to grade. After the development of mental tests during World War I they tried out some Army tests, particularly the Army Alpha, and developed numbers of mental tests for various kinds of positions. Out of these grew the special aptitude tests, the terminology of which was related to the demands of particular jobs; these were found to result in better selection than when the mental test alone was used. A supplementary test, the achievement or trade tests, particularly for mechanical workers was devised and used as a check on reported experience and was given to applicants for positions that require technical training.[1]

Since intelligence tests proved of value in World War I there has been a demand for their general use in many industries. Research men in applied and experimental psychology have worked on the development of all kinds of tests which might be used in industry and scientific methods have been devised for evaluating and standardizing such tests. The debate as to whether tests or the interview is

1. Herbert Moore, Psychology for Business and Industry, (New York, McGraw-Hill Book Company, 1942), p.107.

the more effective method of selection has gone on even among psychologists. Those who hold out for the test method base their arguments principally upon the elimination of the subjective judgment of the interviewer. Other psychologists hold that the interviewer, who possesses the necessary qualifications, can arrive at a more accurate estimate of the applicant's potentialities. In any event it is necessary to realize that the contribution which the test results make to the selection process depends to a large extent upon the ability of the test administrator, his ability not only to select and develop a test pertinent to the jobs to be filled, but also to interpret the results of the tests used.

Paul S. Achilles of the Psychological Corporation points out the unique value of intelligence and special ability tests as a means of measuring which one applicant will excel another in actual performance of a task, which neither the application blank nor the interview can do. He also looks on employment testing as an aid in corroborating or correcting the interviewer's opinions and the applicant's statements by objective evidence, and finally as a means of quickly ascertaining which applicants have the greatest aptitude for learning, and which ones now know certain things, or how well they can now do certain things.[1]

1. Paul S. Achilles, "Employment Testing" in How to Train Workers for War Industries (New York, Harper and Brothers, 1942), p. 174.

A statement made by Dr. Marion Bills at the Nation Office Management Association Conference in 1933 regarding the similar conclusions based on seven years follow-up of psychological tests in two quite different concerns, using quite different examinations, was that, if the criterion chosen is the ultimate job level reached after a period of years, the forecasts made by the psychological examinations for employment correlate with the ultimate job level a little better than any other single criteria that is available at the time of employment.[1]

Office work offers a very fertile field in which to use tests as a method of selection, first because the definite ability and technical knowledge required in some jobs, such as the operation of any kind of machine, is very easily subjected to test measurement, and secondly, since most office work requires a certain degree of mental alertness and intelligence, the trained psychologist can establish a criterion of mental ability for each job. However, technical knowledge, acquired ability, and intelligence are not the only considerations when determining the individual's adaptability to a particular situation, so clerical aptitude tests are of almost equal importance

1. 1933 Conference Proceedings of the National Office Management Association, p. 74

with the achievement test for the office job. It has been frequently demonstrated that on a purely routine job requiring no technical skill the worker with so-called "clerical aptitude" advances much more rapidly than the worker with some training or experience which gives him the initial advantage of acquired ability. Another aspect to consider is the temperament, character and interests of the worker which make him fit into the particular situation, and some attempts have been made to determine these by test methods. Although personnel experts and administrators are less apt to accept standardized tests as accurate methods of evaluating personal characteristics, there have undoubtedly been some cases where temperament scales or similar devices have been used to advantage.

Moore states that clerical tests have justified their use in business and industry with more valuable results than have other tests, such as trade or mechanical. Their successful operation over a period of years has been due to a large extent to the cooperation between such organizations as the National Office Management Association, the Life Office Management Association, selected insurance companies, and such research institutions as the Personnel Federation, the Psychological Corporation and various graduate schools of education. This cooperation has made possible comprehensive surveys and job analyses, on the

bases of which tests representing different interests could be constructed.[1]

In the following pages the general application to office worker selection is considered for each of five groups of tests: (a) clerical achievement tests, (b) clerical aptitude tests, (c) mental ability tests, (d) physical ability tests, and (e) personality tests. Also included is consideration of some special clerical examinations which combine two or more of these groups, such as the National Clerical Ability Tests.

1. Clerical Achievement Tests

Achievement or ability tests in their simplest form were the first to be used in selection of office workers. J. William Schulze in an "Office Management" textbook published in 1919 advocates the general use of tests in spelling, arithmetic, reason and reading. The test of reason is especially recommended for correspondents.[2] There is no suggestion of standardization or no consideration of establishing the validity of such tests. A 1941 publication entitled "How to Direct and Select the Office Staff" recommends special standardized tests for each class of routine office worker, as well as pointing out the

1. Herbert Moore, Psychology for Business and Industry (New York, McGraw-Hill Book Company, 1942), p.142.

2. J. William Schulze, Office Administration (New York, McGraw-Hill, Inc. 1919),pp.20-25.

differences in mental requirements and personality traits important in each kind of job.[1] A comparison of these two textbooks is a significant example of the increased specialization in routine office jobs as well as of the advance in the scientific treatment of the selection problem which has resulted in the development of a large number of standardized tests for use in selection of office workers. This particular textbook is intended for use of the small business man as an aid in handling his own "personnel" problems and for this specific purpose it contains much worth-while information concisely presented.

Some well-known achievement tests are the Benge Stenogauge, Thurstone Examination in Typing, Blackstone Stenographic Tests, Blackstone Typing Tests and Otis Arithmetic test. Many companies have developed their own achievement tests for use in selecting clerical workers.[2]

2. Clerical Aptitude Tests

Clerical tests are based on the assumption that there is such a quality or function as "clerical ability" and that tests can be devised which will appraise the strength of that quality; there is the further assumption that clerical

1. Edward A. Richards and Edward B. Rubin, How to Select and Direct the Office Staff (New York, Harper and Brothers, 1941).

2. In Appendix A, infra, selection programs, including specific tests used, are given for several large representative companies.

ability is a combination of a number of capacities, and that tests to be of value must appraise the capacities that are needed in the particular type of clerical work.[1] As early as 1927 Dr. F. G. Nichols of the Harvard Graduate School of Edudation, working with 54 firms employing 34,513 office workers compiled a list of eleven capacities and then determined to what extent each capacity was required in twenty-one different office positions. The capacities covered for each job are executive ability,knowledge of English, ability in figures, eyesight, hearing, physical strength, and the special qualities include accuracy, accuracy in details, accuracy in figures, cooperation, concentration, courtesy, judgment and clear thinking, manual dexterity, mental alertness, systematic habits and willingness to assume responsibility.[2] Loyalty was checked as a necessary qualification for every job by every office manager and therefore was not listed as a qualification for each position.[3]

The tests which Moore lists as giving indication of promise are the following: Benge, Clerical Test D, Bennett: Stenographic Aptitude, Chicago Test of Clerical Promise, Detroit Clerical Aptitudes Examination, Minnesota

1. Herbert Moore, Psychology for Business and Industry(New York, McGraw-Hill Book Company, 1942) p. 1942.

2. Ibid., p. 146.

3. Ibid., p. 147.

Vocational Test, O'Rourke Clerical Aptitude, Scott Company File Clerk, Shellow: Intelligence Test for Stenographers and Typists, Thurstone: Examination in Clerical Work, Form A. Moore provides a key to this list of tests so that for each one can determine the capacity measured and the significanee of that capacity in office work.[1]

Such studies as the foregoing provide a scientific basis for testing as far as office workers are concerned. In the case of clerical aptitude tests, as well as achievement tests, there seems to have been little recent progress in research of this type or in the standardization of new tests.

3. Mental Ability Tests

It is generally conceded that all occupations have intelligence levels and office employees are no exception to the rule. The new employee who is to do satisfactory work in handling complex details, develop proficiency in skilled operation of modern office equipment, or acquire advanced knowledge for promotion must possess a degree of intelligence to meet these requirements.

Intelligence Tests

The use of standardized intelligence tests to determine the comparative mental ability of applicants is

1. Herbert Moore, op. cit., pp.143-144.

widespread. Some standardized tests with satisfactory reliability and validity are the Revised Stanford-Binet Scales; the Terman Group Test of Mental Ability; the revised Army Alpha Examination, Form 6, Bergman's Revision of Army Alpha Examination, and Otis Self-Administering Tests of Mental Ability.[1]

Mental tests as a measure of promotability

Most psychologists and research people in the field of testing agree that intelligence tests or mental alertness tests are most valuable as a measure of the promotability of a clerical worker but that this type of test by itself is inadequate as a means of selection.

Walter V. Bingham, who has done a great deal of research in the field of employment, says:-

> Intelligence tests do not measure all the abilities required but do give some measure of both the perceptual and intellectual abilities without which the clerical worker is bound to be at a disadvantage. The correlations between intelligence test scores and clerical progress are not remarkably high but are consistently positive and real.[2]

Dr. Marion Bills of the Aetna Life Insurance Company has done much research, written many articles and delivered many lectures on the subject of tests for clerical

1. Dr. F. E. Walsh, "Testing Office Employees," 1939 Conference Proceedings of the National Office Management Association, p. 26.

2. Walter V. Bingham, "Classifying and Testing for Clerical Jobs," Personnel Journal, November 1935 (Vol.14) p.170.

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1. Dr. P. R. Walsh, "Testing Office Employees," 1929 Conference Proceedings of the National Office Management Association, p. 88.

2. Walter V. Bingham, "Classifying and Testing Clerical Jobs," Personnel Journal, November 1928 (Vol.7-3) p.170.

workers. She places a great deal of emphasis on the mental alertness test as predicting the level of promotability and defends the importance of "promotability" as a factor in selection for two reasons: (1) a person who fails to progress becomes discontented and often a problem.

> Our studies of difficult adjustments of persons who have been with us ten years or more show at least 75% of them have mental alertness scores below that which we would consider a critical score for handling decision-making jobs.[1]

(2) The second reason is based on fairness to the worker in that a person with clerical ability not sufficient to earn promotion should not be permitted to spend ten years or more finding this out when he might have fitted into a good job in another line.[1]

Dr. Bills' arguments are convincing but they do however, presuppose one thing, which is the presence of opportunity for promotion. It can be conversely argued that the intelligent worker in a routine job beneath his potential ability may become equally dissatisfied if the opportunity for advancement is lacking. This situation, too, can be held out as a sound (if negative) reason for the use of intelligence or mental ability tests, in order not to select a worker too advanced mentally for any job which could become available.

1. Marion Bills, "Ability and Aptitude Tests for Clerical Workers," Journal of Business Education, December, 1943 (Vol.XIX, No.4), p. 13.

4. National Clerical Ability Tests

The National Clerical Ability Tests offer a combination of achievement, aptitude, and mental tests; they are carefully prepared and administered by a competent committee under the sponsorship of the National Office Management Association. These tests are not available for private use but must be given to groups of individuals under proper supervision. Candidates taking these tests are selected from high school graduating classes on the basis of school grades.

The National Clerical Ability tests measure skills required in specific office jobs as follows: Stenographic, Typing, Bookkeeping, Machine Transcription, Filing and Machine Calculation. The tests do not involve speed and are aimed at testing the ability of the candidate to do a comprehensive piece of work under job conditions.[1] In addition to testing specific skills the tests provide for (1) a test of fundamental knowledge, (2) a general background information test, and (3) a personal rating schedule, which consists of a rating scale of personal qualifications checked by a teacher who knows the candidate personally.

1. Dr. F. E. Walsh, "Testing Office Employees," 1939 Conference Proceedings of the National Office Management Association, p. 25.

With respect to the National Clerical Ability tests Dr. Marion Bills states:

> The National Clerical Ability tests may be classed as about 70 percent grade tests and 30 percent general mental alertness tests. You need to have no hesitancy in accepting both the mental alertness and the trade ability of anyone certified by these tests as being well beyond the average that you can hope to get with unselected applicants.[1]

While these tests are undoubtedly excellent measures of the ability of applicants who are capable of advancement to positions of responsibility, they might be of less value in selecting workers for many routine office jobs because the high standards would eliminate many who might satisfactorily fill routine jobs.

5. Research on Comparative Validity of Clerical Tests

Because of an increased interest in clerical testing which had arisen, in 1935 the Life Office Management Association appointed a special committee to conduct a study with the hope of finding whole tests or parts of tests that would be helpful in predicting the future success on the job of applicants for employment in life insurance companies. A group of 94 clerical workers were chosen to represent a fair cross-section of life insurance company employees, these representing four companies in four different states. The

1. Marion Bills, "Ability and Aptitude Tests for Clerical Workers" Journal of Business Education, December,1943, p. 13.

criteria used were supervisor's ratings.

The following five tests were first chosen for trial:

(1) Bureau Test VI - a spiral omnibus consisting of 184 items (15 minutes).

(2) Thurstone Clerical Test consisting of 8 sub-tests which was a work-limit test, maximum 1½ hours, scored on the basis of errors and time.

(3) Modification of Thurstone consisting of nine sub-tests, maximum 1½ hours.

(4) Minnesota Vocational Test for Clerical Workers.

(5) O'Rourke Clerical Aptitude Test Junior Grade, consisting of six sub-tests.

The first three were mental alertness tests and the last two strictly clerical. When the last test failed to give satisfactory distribution on the group studied the O'Rourke general classification test Senior Grade was added; this is a spiral omnibus consisting of 105 items, limited to 40 minutes and scored on number of correct responses.

Results of this study indidated that the Thurstone Test and Modified Thurstone were slightly the better tests and the Minnesota name checking the poorest.[1]

6. Tests of Physical Ability

In selecting office workers, physical ability

1. Charles M. Davidson, "Evaluation of Clerical Tests," Personnel Journal, June, 1937 (Vol.16, No.2), pp.57-63.

tests, if given at all, are of secondary importance. The medical examination is apparently becoming a generally accepted part of the selection procedure in large companies for all classes of workers, but no definite figures are available to show the extent of its use with respect to clerical employees. At the 1939 meeting of the National Office Management Association two-thirds of a group of representatives of thirty-five different firms indicated that they gave pre-employment medical examinations to office employees, while only one-third gave subsequent medical examinations.[1]

The employee's own statements with respect to past illnesses, eyesight, and hearing as given on the application blank are often accepted without question, although in some instances where a position requires exceptionally good hearing or eyesight tests are used. In most cases the physical requirements of the job, and the physical suitability of the applicant to perform the task are obvious from the applicant's statement on the application form, from the interviewer's observations, and the medical examination when required can be relied upon to reveal any unusual defects which would render the applicant unsuitable for a particular kind of work.

1. 1939 Conference Proceedings of the National Office Management Association, p. 28.

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1. 1939 Conference Proceedings of the National Office Management Association, p. 58.

7. Personality Tests

Personality tests, temperament scales and interest inventories are apparently used much less widely than other tests in the selection of office workers. The attempt to measure personality traits by standardized tests is more complex than measuring other factors and therefore the most generally accepted methods of judging personal characteristics is to rely upon the evaluation of the interviewer.

Attempts at more scientific methods of appraising individual personality traits are represented by the personality rating scale (such as ratings by teachers used in connection with the National Clerical Ability tests) or a questionnaire method, such as the Bernreuter Personality Inventory and Humm-Wadsworth temperament scale, where numerous questions are answered by the testee. The results of these tests are related to a definite criterion group; that is if the result of a given test is similar to that made by members of a definite group, selected as being successful in their field, the applicant, other things being favorable, is selected as a good risk for employment in that field. Emotional stability, constancy of purpose, disposition, courtesy, tact, willingness, cooperation, initiative, aggressiveness, ambition and leadership are some of the traits usually covered.[1]

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1. Dr. F. S. Wolsh, "Testing Office Employees" 1919 Conference Proceedings of the National Office Management Association, p. 89.

While the results of such tests are no guarantee of individual success they should clearly indicate in which field the applicant will have greater satisfaction; when people are reasonably happy in their work their efficiency increases. Undoubtedly, if correctly interpreted, temperament tests can be of great assistance in spotting a neurotic or potentially psychotic person and, even though such persons must frequently be employed, they can be placed in positions where their peculiarities will be least likely to cause trouble.

The following statement is made by Guy W. Wadsworth, Jr. (co-author of the Humm-Wadsworth Temperament Scale) relating to the importance of character traits in the office worker:

> When we think of a 'good worker' in a clerical occupation most of us have in mind an accurate trial balance, or steadiness of application to monotonous or repetitive assignments. It should be obvious, however, that these represent only one phase of a successful long-term employment relationship. Failure on the part of the worker to tie in with equals and superiors can create situations which concern management quite as seriously as mediocre production. In short, the job situation presents a social relationship as well as a technical aspect. Enlightened employers are learning to evaluate the importance of being agreeable on much the same footing as technical skill.[1]

1. Guy W. Wadsworth, Jr., "Hidden Abilities of Clerical Workers," Office Management Series, No.88 (New York, American Management Association, 1939), p. 3.

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1. Guy W. Wadsworth, Jr., "Hidden Abilities of Clerical Workers," Office Management Series, No. 88 (New York, American Management Association, 1939), p. 5.

The Lockheed Company made full use of the Humm-Wadsworth Temperament Scale during the war when they were hiring vast numbers of workers and in this company, where the scale was used for office workers as well as others, there appears to be a strong feeling that it is worthwhile.[1]

It is difficult to forecast whether the use of personality tests for selection of office workers will increase. At present, with a scarcity of office help there is probably little incentive for its use but a return to a period of decreased employment might give impetus to the use of personality tests in selection, as the depression of the 1930's motivated employers to use other selection tests.

B. Character and Personality Traits of the Satisfactory Routine Office Worker

1. What Personality Traits are Desirable?

Much has been written concerning the method of discovering personal characteristics and of the methods of determining desirable characteristics of persons in certain kinds of positions, but there have apparently been few attempts to determine exactly what "personality traits"

1. See Appendix A, infra, for a description of the Lockheed Company's selection program. (R. Randell Irwin, "Lockheed's Full Testing Program," Personnel Journal, September, 1942, pp.105-109.)

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are peculiarly characteristic of the satisfactory routine office worker. There seems to be a lack of clear-cut line between what are personality traits and what are mental capacities. For instance, Leffingwell and Robinson list several mental capacities of workers, which "capacities" include judgment, initiative, aggressiveness, thoroughness, disposition, tact and diplomacy, organizing ability, supervising ability, culture and knowledge and skill. Of these, initiative, aggressiveness and disposition seem distinctly related to personality, while the others include both innate and acquired characteristics. At any rate they arrive at the conclusion that the so-called "capacities" are of varying importance depending upon the job, and comment upon the necessity of initiative being controlled by judgment and of aggressiveness being desirable only when kept within bounds.[1]

The only evidence found of a scientific approach to determining the strictly innate personality traits of successful clerical workers is a study made by Arthur F. Dodge in 1940.[2] Eight separate groups of female employees of four different organizations were selected (none were

1. William H. Leffingwell and Edwin M. Robinson, Textbook of Office Management (New York, McGraw-Hill Book Company, 1943), p. 277.

2. Arthur F. Dodge, "What are the Personality Traits of the Successful Clerical Worker," Journal of Applied Psychology (Vol. 24, 1940) pp. 576-586.

machine operators, except typists); ability ratings were obtained based on quantity of work only, dividing the total number into better and poorer. The better clerical workers reported themselves on the questionnaire more frequently than did the poorer workers, as (1) not moody and not subject to worry, (2) even-tempered, (3) lacking self-sufficiency, (4) unwilling to accept responsibility, (5) non-social, and (6) not craving admiration.

In order to determine to what extent these traits correlate with success in each of the eight different groups of clerical workers the following steps were taken. The personality inventories as originally filled out by the 192 individuals were first scored with respect to the 39 items on the inventories and weights of 1 to 3 were assigned to these items according to the degree to which they were differentiated between the better and poorer workers. The resulting scores (designated as "clerical personality scores") were then correlated with the original ratings of clerical success or ability. The following table shows such correlation for each of the eight original groups from the four business organizations.

	Group	Number	Coefficient of Correlation
Business Organization 1 (Mail Order House)	a	26	.64
	b	39	.50
Business Organization 2 (Mail Order House)	a	21	.32
	b	34	.62
	c	23	.49
Business Organization 3 (Public Service)	a	20	.39
	b	10	.30
Bank	(one group)	19	- .04

Since the nature of the work in the mail order houses was the most routine and that in the bank the least routine, the above table indicates that the traits revealed in this study are most highly correlated with success in clerical work of a highly routine nature. Incidentally, the less routine a task the more difficult it is to measure ability or success.[1]

Results of a study of this sort are certainly not conclusive, nor could they be used as a rigid guide in selection; however, if the job to be filled is of a routine nature in which not much advancement is possible, the employment interviewer (who may be prone to be much more impressed by the self-sufficient sociable girl seeking her first job than by the opposite type of girl) might well consider the indications of this analysis. A social individual

1. Arthur F. Dodge, "What are the Personality Traits of the Successful Clerical Worker," Journal of Applied Psychology (Vol.24, 1940), pp.580-581.

	Group	Number	Coefficient of Correlation
Business Organization 1 (Mail Order House)	a	28	.24
	b	29	.30
Business Organization 2 (Mail Order House)	a	21	.32
	b	24	.32
	c	23	.49
Business Organization 3 (Public Service)	a	20	.29
	b	10	.30
Bank	(one group)	19	- .04

might find it difficult to stick to a routine task without frequently talking with a neighbor, while a self-sufficient individual or one desiring responsibility might become irked with routine and might even cause trouble by assuming responsibility.

The Strong Vocational Interest Blank scoring key indicates the assumption that the successful office worker likes to assume responsibility.[1] It is quite possible that the criterion of success used in evaluating this quesionnaire is different from that used by Mr. Dodge in his study, which as he carefully pointed out, was based on quantity output. If the measure of "success" is the job level ultimately reached rather than output in the initial job, the desire to assume responsibility could well be a characteristic favorable to successful advancement. Also, according to the Strong Scoring Key, the successful office worker (1) does not wish to start activities of his group, (2) does not win friends easily, and (3) has less than an average share of novel ideas, and (4) dislikes public speaking.[2] These four assumptions, at least, are not in conflict with the results of Mr.Dodge's study.

1. Arthur F. Dodge, "Characteristics of Good Clerks," Personnel Journal, March 1942 (Vol.20, No.9), p. 326.

2. Ibid., p. 326.

2. Repetitive Office Work and Susceptibility to Monotony

Industrial psychologists have performed numerous experiments to determine methods of grading the individual's susceptibility to monotony, or the extent to which the individual dislikes and is adversely affected by repetitive tasks. These experiments were made because some felt that it was important in selecting industrial workers for repetitive jobs to eliminate those who were highly susceptible to monotony. As far as can be ascertained by the writer no attempt has been made to make this application of the theory to selection of office workers. It seems to the writer that this factor is an important consideration in selecting office workers for repetitive jobs for three reasons: (1) since office tasks require a certain degree of concentration and accuracy, the office worker cannot relieve monotony by day dreaming without seriously impairing his efficiency. (Industrial psychologists tell us that the factory worker uses day-dreaming as a relief from boredom.) (2) A second reason is that boredom is a basic factor in many cases of maladjustment, but what is boring to one individual may be interesting to another. Instead of accepting the belief that workers are going to be bored with repetitive work, anyway, it might be possible to eliminate those particularly susceptible to monotony. (3) Thirdly, with the increasing specialization of office tasks, there is inevitably increasing repetition, which will

make the worker's susceptibility to monotony of increasing importance in the future.

A survey was made by the writer, using the questionnaire method, of 122 female office employees working in different kinds of offices excluding those holding supervisory position. The aim of this survey[1] was to attempt to discover what percentage of these girls considered their work either mentally or physically fatiguing, or monotonouse, and how their attitudes toward these factors and other job factors correlated with whether they liked or disliked their jobs. Interspersed among the questions having to do with attitude toward the job were eight questions of the type supposed to measure the individual's preference for variety in daily life as an indication of susceptibility to monotony, and the answers to these questions were weighted in such a way as to give "susceptibility scores" for individuals which ranged from -17 to + 21, 0 representing the median. (The plus scores represented individuals with the greater dislike for repetition.)

The questionnaires were then divided into three groups according to job classifications, as follows:-

Group I - Jobs characterized by variety of task, some use of machines (secretaries and general office workers)

1. Appendix B, infra, contains a full report and explanation of this survey.

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Group II - Jobs having little variety and all involving machine work (Stenographers, typists, office machine operators)

Group III -Jobs involving homogeneous mental work (accountants, bookkeepers, and clerks)

Then each of these groups was broken down into those who liked and those who disliked their jobs.

The surprising and unexpected fact brought out by this classification was that 100% of those who disliked their jobs considered them monotonous, whereas only 11% of those who liked their jobs considered them monotonous.[1]

This group classification brought out the fact that some girls like repetitive work even though they consider it monotonous. In Group II, for instance, which included the jobs with the least variety, 34% of those who liked their jobs also considered them monotonous. The average susceptibility score for Group II was -4 for those who liked their jobs and -1 for those who disliked their jobs (in this case the susceptibility score is the average deviation of the group from the median for all groups). In other words the groups with the lowest susceptibility score showed the least objection to the repetitive jobs.

There seems to be a definite correlation between the variety nature of the jobs and the susceptibility score for the group. In 1946 when this study was made the demand for female office workers was in excess of the supply so it

1. Appendix B, p. 139.

would naturally be expected that a large percentage would have jobs they liked. (Out of the 122 counted there were only 19 who disliked their jobs.) The susceptibility score for Group I, comprising the variety jobs, was plus 2, while that for Group II was -4, and for Group III, composed of accountants, bookkeepers, clerk (jobs involving homogeneous non-machine work, but which could not be segregated as to amount of variety) the score was 0, the median for all.

Observation of the varying reactions of different girls engaged in routine work to the repetitive nature of the work, as well as the results of this questionnaire, leads the writer to feel strongly that discovery of some technique to determine relative susceptibility to monotony and the use of it to eliminate the more susceptible in selecting workers for repetitive, homogeneous, routine office work, would be a progressive step in effective selection.

C. Selection Programs in Some Large Companies

Reading what has been written concerning the programs of selection used in different companies impresses one with the variety of combinations of the different selection techniques. To illustrate a few of these, descriptions of selection programs are included in Appendix A. Not only do the tests used vary widely, but the order of applying tests and the importance of the results in relation to the interview differs. For instance the Jewel Tea

Company[1] applies careful interviewing to select the candidate to test, while the Atlantic Refining Company[2] tests first for selection, then uses interest tests for placement. Lockheed,[3] mentioned before in connection with its use of the Humm-Wadsworth Temperament Scale, emphasizes the use of intelligence and personality tests for all employees and then applies trade tests.

The Kimberly-Clark Corporation's plan for selecting office workers[4] is particularly interesting because of the fact that the office workers are recruited from their own factory, tests being given first to determine general adaptability, followed by interviews for placement. The details of the plan as outlined by C. E. Jurgensen, a trained psychologist,[5] seem to indicate a very well integrated selection and training program.

1. Appendix A, p. 122.

2. Appendix A, p. 124.

3. Appendix A, p. 129.

4. Appendix A, p. 126.

5. C. E. Jurgensen was an instructor in "Psychology and Industrial Relations"at the University of Wisconsin, Extension Division, before he joined the Kimberly-Clark organization in 1937. He carries on work in industrial psychology, testing, rating and counseling.(Office Management Series, No. 97, 1942, p. 6)

CHAPTER IV

PRE-EMPLOYMENT TRAINING

It is obvious that the adequacy of pre-employment training is an important factor in decreasing the training costs of the employer, and for that reason the following pages describe the evident progress which has taken place in secondary school instruction for office workers. Following this, in Chapters V and VI, are discussion of training programs of office machinery manufacturers, and training techniques of the employer, with special emphasis on the changes due to the war emergency.

A. Secondary School Instruction

For many years the larger high schools have offered commercial courses for the training of those who intended to go into different phases of office work, and these schools, as well as the private schools, have attempted to meet the demands of modern business by constantly surveying the needs of business as to type of worker required and, as far as possible, by attempting to guide students into the kind of work for which they were best fitted.

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For many years the larger high schools have offered commercial courses for the training of those who intended to go into different phases of office work, and these schools, as well as the private schools, have attempted to meet the demands of modern business by constantly surveying the needs of business as to type of worker required and, as far as possible, by attempting to guide students into the kind of work for which they were best fitted.

Frederick G. Nichols of the Harvard Graduate School of Education was the outstanding pioneer in advocating coordination of the high school commercial curriculum with the needs of business and the establishment by scientific means of what the needs of business really were. "A New

Conception of Office Practice"[1] published in 1927 was made possible by the cooperation of the National Office Management Association with Mr. Nichols. It is a detailed presentation of factual information concerning specialization in office work upon which the specific training recommendations are based. In 1933 Mr. Nichols published a detailed and complete critical treatment of the whole field of commercial education.[2] In the foreword to this large volume it is pointed out that commercial education represents the largest single field of special training in the country, and that in the previous year thirty-two million dollars was expended for the teaching of commercial subjects in the public secondary schools alone.

In 1939 Herbert A. Tonne, of New York University, published a textbook[3] aimed at improvement of curricula of business courses. This emphasizes the importance of adapting the commercial courses, primarily in high schools, to the needs of business. It is a textbook for curriculum construction , outlining up-to-date office procedures as a practical basis for planning courses for routine office workers.

1. Frederick G. Nichols, A New Conception of Office Practice (Cambridge, Harvard University Press, 1927) 123 pp.

2. Frederick G. Nichols, Commercial Education in the High School (New York, D. Appleton-Century Company, Inc. 1933) 514 pp.

3. Herbert A. Tonne, Business Education, Basic Principles and Trends (New York, The Gregg Publishing Company, 1939) 344 pp.

A reading of many articles in the Journal of Business Education[1] published during the last ten years indicates a planned tendency to train high school commercial students in the use of office machines, and a tendency to select the machines for such training in accordance with demands for certain kinds of operators as indicated by surveys made of local firms. For example a survey of twenty large firms in St. Louis employing 7807 office workers indicated the use of 5279 office machines, a ratio of 1.6 employee to eaeh machine. Typewriters were found to exist in the ratio of 176 to 1, or approximately 3 machines to every 4 employees.[2] There was found to be an increasing use of transcribing machines and adding machines, necessitating key-driven machine operators. Rotary type calculating machines were found in calculating and statistical departments of the larger firms, and bookkeeping machines in small numbers were found in practically every firm.[3]

1. Office Practice Programs

High School commercial departments are apparently

1. The editor of this publication is Herbert A. Tonne.

2. Lawrence Hanebruck, "Employment of Office Machiner Operators" Journal of Business Education, January 1941(Vol.XVI, No.5), p. 23.

3. Ibid., p. 24.

1. The editor of this publication is Herbert A. Tonne.

2. Lawrence Henderson. "Employment of Office Machine Operators" Journal of Business Education. January 1941(Vol. XVI, No. 5), p. 23.

3. Ibid., p. 24.

giving attention to the prerequisite of the students who take training in the use of office machines. For example a report of a survey of office practice in ten states, written in 1942, indicates typewriting as a prerequisite for those taking duplication work. Bookkeeping is a prerequisite for the use of a bookkeeping machine.[1] Only one state recommended the office practice course for students whose chance of success in shorthand or bookkeeping were poor but who wished to pursue a business course.

Many large high schools provide instruction on the battery plan on calculating machines, as indicated by an article concerning this sort of instruction, where 35 Burroughs and 33 Monroe calculators were used.[2]

A rather complete outline of high school instruction is contained in an article on office practice in the Medford (Massachusetts) High School.[3] Here, stenographic pupils are divided into two groups - one group who, on the basis of their school record and prognostic tests, show that they have the intelligence, speed of motor reaction

1. Agnes Lebeda, "Office Practive in Ten States," Journal of Business Education, January 1942 (Vol.XVII, No.5) p. 25.

2. George S. Daniels, "The High School Calculating Course," Journal of Business Education, April 1942 (Vol.XVII, No.8), p. 17.

3. M. Gertrude Roughsedge, "Office Practice at Medford High School," Journal of Business Education, October 1942 (Vol.XVIII, No.2), p. 11.

and other qualities needed to enable them to become skilled operators, are given intensive training consisting of four periods a week for two years, and are required to do a certain amount of preparation outside of class.

Those who take the accounting course specializing in bookkeeping or accounting have one period a week of training on machines which they are likely to find useful in that field; in other words a little experience on the simpler machines is included without attempting to give enough instruction to permit the student being employed as a machine operator.

However, the course provides for two years of specialization in one machine for the qualified student. The machines are grouped as follows: (1) machine transcription, (2) mimeograph, duplicating, multigraphing and billing, (3) billing machines and adding machines, and (4) bookkeeping machines and adding machines. The billing adding machine unit is generally left for the pupils who do not otherwise quality, but consists of a complete course in billing on several different types of machines. The bookkeeping adding machines section requires at least two years of bookkeeping as well as the machine work.[1]

1. M. Gertrude Roughsedge, "Office Practice at Medford High School," Journal of Business Education, October 1942 (Vol.XVIII, No.2), p. 11.

2. Bookkeeping in Secondary Schools

As far as high school bookkeeping is concerned it has come now to be looked upon as a background study for bookkeeping machine operators, or sometimes for the stenographic secretary. Placement studies show that less than one-fifth of high school students who enroll for bookkeeping secure employment directly as bookkeepers.[1] As pointed out in a previous chapter, the specialization in modern business has greatly decreased the need for the bookkeeper as such; therefore, the bookkeeping course is coming to be looked upon merely as a basis for interpreting machine work and guarding against errors. New workers in bookkeeping occupations must begin as ledger clerks or machine operators, so bookkeeping for vocational purposes should be more completely directied "toward making students competent ledger clerks and bookkeeping machine operators."[2]

3. Training of Key Punch Operators

As yet the training of key punch operators has apparently not been widely undertaken by public schools. A discussion of this training at the Metropolitan School of

1. Ernest A. Zelliot, "High School Bookkeeping Objectives," Journal of Business Education, March 1945 (Vol. XX, No.7) p. 12.

2. Herbert A. Tonne, "Trends in Business Occupations 1930-1940," Journal of Business Education, March 1944 (Vol.XIX, No.7), p. 12.

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Business in Los Angeles, written in 1942, is significant because of the growing demand for this type of work.[1] The writer of this article states first that "care in the selection of prospective students is a determining factor in the success of training key punch operators." On the basis of experience several things are found to be prognostic:(1) the best and most satisfied candidates are those who have no marketable skill other than typing; in other words, they do not encourage trained stenographers or accounting machine operators to take up key punch.(2) Good typists usually make good key punch operators for both the numerical and alphabetical printing punches. A typing rate of 45 words a minute is required of applicants. (3) There seems to be a degree of positive correlation between key punch operation and clerical ability as measured by the Minnesota Vocational tests for clerical workers. "According to studies made by the United States Employment Service, the coefficient of correlation varied from plus .24 to plus .33."[2] (4) The upper age limit is 25 (the same as for students trained at I.B.M.). (5) Good physical and mental coordination are necessary as well as steady nerves, good

1. Virginia D. O'Neill, "Selection, Training and Placement of Key Punch Operators,"Journal of Business Education, May, 1942 (Vol.XVII, No.9), pp.19-20.

2. Ibid., p. 19.

health and eyesight, and at least an average mental alertness and an aptitude for detailed painstaking work. (6) The girl should have a liking for machine work and be able to work for long periods of time, if necessary, although she may not punch continuously for the entire day. This school feels also that a well-rounded course in office work such as filing, record keeping, etc. should be given at the same time in order to make the work of the machine operator more meaningful.

To meet the minimum employment standard 100 to 125 hours are required to train a key punch operator on the numeric machine (12 to 15 weeks) and in addition about 60 hours practice on the alphabetic printing punch.

The program at the Metropolitan School of Business is particularly effective because the student combines practice and actual key punch work under real business conditions. After a preliminary few weeks' training on the numerical key punch she is sent to the Los Angeles City Board of Education where she receives additional instruction and does actual work under supervision. The work varies and also includes filing, sorting and other clerical work connected with the Hollerith method. At this time the trainee becomes acquainted with the sorting machine, duplicate punch, alphabetical printing punch and some of the tabulating machines. Although in some cases girls advance to be tabulating machine operators this work is usually done

by men.[1]

A training program such as above described seems to represent a case where a secondary school is meeting the needs of business very adequately. The writer of the article reports 100% placement of graduates,[2] which, of course, in 1942 does not seem surprising.

It would not seem difficult to imagine that the teaching of key punch might become as common in the public schools as the teaching of machine transcription, if the predicted future expansion of key punch accounting materializes.

4. Office Training in Chicago Schools

James B. McCahey, President of the Chicago Board of Edudation, in addressing the National Office Management Association in 1945, outlined the business training offered by the public schools of that city. The business education in the general high schools consists of training in skill subjects, such as Office or Clerical Practice, Bookkeeping, Calculating Machines, Shorthand, Typewriting and Salesmanship or Merchandising. In order to strengthen the business education in the general high schools a modernized office

1. Virginia D. O'Neill, "Selection, Training and Placement of Key Punch Operators," Journal of Business Education, May, 1942 (Vol.XVII, No.9), p. 20.

2. Ibid., p. 20.

practice program was recently established. In forming this program the opinions of business executives were sought; a committee chosen from the local National Office Management Association group worked with administrators and the vice-president of the Board of Education on such problems as room layout, equipment needs and training programs to be developed. One of the objectives was to make the appearance of the classroom as realistically businesslike as possible, with furniture modeled after that of a modern office. The machines selected included key driven and rotary calculators as well as adding-listing machines, and, for training in connection with correspondence, machine transcribers and duplicators (both stencil and liquid process types) were added. Since filing is important, miniature equipment is provided for practice in the application of the most recent principles in this field.[1]

The Jones Commercial High School provides for specialization in office work[2]-- all students attend two years of general high school first, and then enter this school, which provides for all-round business efficiency and a high degree of skill in one of the following: accounting, stenography and typing, or business machines.

1. James B. McCahey, "Education as an Aid to Management," 1946 Proceedings of the National Office Management Association, p. 22.

2. Ibid., p. 23.

As Mr. McCahey states, "Nothing has been left to chance in the endeavor to turn out graduates who are well adjusted to their environment when they begin their business careers."[1]

B. Summary

As indicated in the articles referred to the the foregoing pages, and in many other articles which have been written with respect to the changes made in high school curricula in order to meet the changing demands of business, there seems to be a real attempt to train students in the secondary schools to enter a large business organization with at least adequate technical training.

It seems evident that the high schools are the most important pre-employment training source for the strictly "routine" worker. College graduates in most cases aim at jobs above the routine level and regard acceptance of a routine job as merely a temporary expedient. While there is excellent training available in private business schools and schools conducted by the manufacturers of office equipment, public school enrollment in commercial courses probably far exceeds the number of student in the private institutions.

1. James B. McCahey, op. cit., p. 23.

CHAPTER V

TRAINING PROGRAMS OF OFFICE MACHINERY MANUFACTURERS

In considering the training problem connected with office work of all kinds it would be a serious omission to overlook the splendid contributions to education, both direct and indirect, afforded by the manufacturers of office machinery. All large manufacturers of office machinery for which skilled operators are required, have educational divisions. However, the approach to the training problem varies with different companies; some companies have invested much in educational research to develop training plans, programs and manuals to be used in secondary schools for training of operators, with teaching programs for use in colleges and normal schools for the training of teaehers, while some conduct their own schools for the training of operators or for the training of supervisors (who will eventually train operators).

As can be ascertained by a study of these programs they influence both the pre-employment training of office workers, through cooperation with the secondary schools and by actual operation of their own schools for unemployed students, and the post-employment training, by supplying trained instructors for on-the-job training, by bringing customer's employees to their operator schools, and by training customer supervisors in their schools. Whatever the

CHAPTER V

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method, the aim is to get better trained operators, which will accrue to the benefit of the employers of the future. If the trend toward mechanization of office work continues, the efforts of the manufacturers in this direction will undoubtedly expand under the conditions of post-war competition which are certain to exist in the near future, and therefore what is now being done in this line marks a significant trend. For this reason, in the following pages resumees of the training programs of most companies of importance in this field are included.

A. Burroughs Adding Machine Company[1]

The Burroughs Adding Machine Company maintains Burroughs Schools for Operators in thirty-one key cities of industrial areas throughout the United States. Each of these schools offers the same standardized courses in specialized training for every type of equipment manufactured by the company. Qualifications for enrollment in all courses are high school graduation, references from previous employers, a thorough knowledge of business arithmetic fundamentals (an entrance test covering current problems is given to check both accuracy and speed). Registrants for Burroughs

1. All information from a letter signed by P.A. Lawrence, Educational Division, Burroughs Adding Machine Company, Detroit, Michigan, dated December 12, 1946 and printed material published by the company.

Type 70[1] machines must also pass a typing test, requiring a speed of forty words per minute for the Computing Billing Course and thirty-five words per minute for either of the two styles of Typewriter Bookkeeping Machines. On the bookkeeping machines a test is given to check the applicant's knowledge of bookkeeping fundamentals.

When a student-applicant meets enrollment requirements for all courses, yet has difficulty deciding on a single course, a general clerical printed test is given which brings out special abilities which help advise the student the correct course for the individual. The three types of course, with the approximate length and tuition are as follows:

Course	Approximate length in weeks	Tuition
1. Calculator Course (two machines) Single Dial Calculator Duplex Calculator	9	$75.00
2. Type 70 - Computing Billing and Bookkeeping Machines Courses		
(a) Any one style	5	70.00
(b) Any two styles	8	105.00
(c) Any three styles	10	140.00
3. Full-keyboard Bookkeeping Machine Courses:		
(a) Bank or Commercial Course	4	50.00
(b) Bank and Commercial Course	6	75.00

The schools also maintain a placement service.

1. Type 70 machines have a typing keyboard in addition to a calculating keyboard.

On-the-Job Training

Installation clerks are employed at most branches to train customers' employees on new machines. However, highly specialized sales representatives always supervise installation work and sometimes prefer to handle on-the-job training themselves, especially if several machines with a complete new accounting system are being inaugurated. In branches where Burroughs Schools are maintained, customers often prefer to send their employees into the schools for pre-installation training.

Regardless of where or by whom the training is conducted each trainee is taught, supervised, and checked individually. Where several of the same style machines are installed at one time the first explanation and demonstration may be handled in a group but individual attention is essential from that point on. A trainee covers only machine fundamentals and his own firm's application, while a skilled operator (trained in the Burroughs school) has been trained to adjust to any application on his type of machine. Therefore three to five days may be adequate for the majority of installations but this varies greatly with the kind of installation, the amount of change of system and the trainee's aptitude and experience.

Characteristics of Good Operators

The company considers all of the requirements for enrollment given in the foregoing paragraphs essential. As

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for other qualifications the following statements are made:

> A sense of rhythm is necessary as concerns ease of machine operation. A rhythmic operator may work almost tirelessly for a full day, while one with jerky, ill-timed habits becomes quite exhausted in a short time. Although no statistics are available on this, our instructresses have found previous musical education a definite asset in students.
>
> A person who enters into a timed drill or test with a zest for competition and the desire to excell will be the operator who will turn out with ease the peak load of work in an employer's office by a given deadline.

Indirect Educational Programs

Besides conducting their operators' schools the Burroughs Adding Machine Company also cooperates with high schools, junior colleges, private schools of all types by assisting them in planning well-coordinated office practice courses, and also with universities, colleges and teachers' training institutions by assisting in planning normal courses for teachers of office practice.

B. Comptometer Company[1]

The Felt & Tarrant Manufacturing Company first started training Comptometer operators in 1905, and is undoubtedly the operator of the largest school system of its kind in the world. There are schools located in approximately

1. All information obtained from a letter signed by B. C. Staffeld, Superintendent of Schools, Comptometer Co., Chicago, Illinois, dated December 6, 1946, and printed circular regarding Comptometer Schools, published by the company.

eighty cities in the United States and eight in Canada (and before the war in many foreign countries). With the tremendous increase in the use of this machine there has been increases in the training program over the last ten years, with every indidation that the demand will exceed the supply for some time to come.

Requirements for admission to the schools are graduation from high school or equivalent education; applicants must be somewhere between the ages of eighteen and twenty-five. An especially prepared aptitude test[1] is given to all applicants. The Comptometer course takes about eight to ten weeks to complete in the day school and about five months in the night school, day school averaging 4½ hours per day and the evening school 2½ hours for two or three nights a week.

On-the-Job Training

Realizing that the demand for operators greatly exceeded the supply the Comptometer Company ten years ago instituted on-the-job training and trained field instructors to give the type of training necessary in the customers' offices. The company trains customers' Comptometer clerks

1. This test was prepared by a prominent psychologist and is accepted in several leading colleges and universities as the outstanding test to be given all applicants prior to machine operation training.

from the simplest to the most complicated operations. In some cases instead of giving customers' clerks training at the offices they bring large groups of clerks to the schools where they have given them the required training:

> The amount of time devoted to training a clerk varies because each one is doing a specific, individualized type of work and it is impossible to set a time limit as to the training. Even in different companies manufacturing the same article, there is a variance in work done by their respective clerks which makes it impossible to set a definite course of training which would be given to all types of employees falling into the category of payroll clerk, billing clerk, etc., because every person is doing a different job. Because of this, the field instructor has to have a highly specialized type of training and a broad experience in all fields of work in order to efficiently train the customers' Comptometer clerks in the many offices.

C. International Business Machines[1]

The International Business Machines Corporation's Department of Education offers instruction in a wide variety of subjects ranging from occupational studies to general education including graduate professional work in Engineering and Business. The work of the department is grouped in four divisions: General and Vocational Education, Engineering Education, Business Education and World Trade. In these divisions their own personnel are trained, including those who become instructors for courses in IBM machine operation

1. Information from a letter signed by Edith Dimmitt, Secretary of Education, International Business Machines Corporation, Endicott, New York, dated February 19, 1947, and from printed material describing the Department of Education.

offered to students entering this field at 100 United States branch offices.

The training in these schools varies in length according to the requirements in the local situations but the average course consists of about four weeks. Qualifications of trainees also vary; the company for some time has been doing experimental work to determine the essential qualifications for successful operation of their machines.

The total completed enrollments in these branch office schools in the United States and Canada as of November 1946, covering the years 1916 to 1946 reached a figure of 77,976 for key punch operation, and 77,974 for machine operation. These figures are for machine operators and are much larger than the enrollment figures for administrators, salesmen, IBM accounting supervisors,and other groups.

On-the-Job Training

A part of IBM's service to customers includes some on-the-job training in the customers' offices but this is usually of an informal nature and directly applied to the particular use that will be made of the equipment. This training does not take the form of instruction in the use of the machines but rather covers the application of the equipment to the specific requirements of the customer.

D. The McBee Company [1]

Training of operators for the McBee Keysort is accomplished entirely through the efforts of the company, which accepts the responsibility of training present or future personnel of the customer whenever a sale is made. All sales areas have the services of an installation supervisor, generally a young woman with years of training and well-qualified to instruct new operators.

The training might be classified as pre-installation and post-installation. For the former it is found preferable to bring trainees to the local McBee office for preliminary instruction. Installation supervisors are provided with a routine to guide instruction during this period. At the time of the actual installation the installation supervisor and the salesman further assist in this training by actually working on the forms specifically involved.

> To maintain a high degree of operator-efficiency our installation supervisors have routine call-back dates on which they check operator performance.

The operation of these machines is much less complicated than other machines used for statistical analyses and would apparently require much less training time. It is a sorting system which provides for fast sorting of Keysort cards, upon which cards the original data is recorded. Other

1. Information from a letter signed by Alex J. Bodary, Manager, Boston office of The McBee Company, 80 Federal Street, Boston, dated February 24, 1947.

machines must be used for the tabulation of the statistical data.

E. Monroe Calculating Machine Company[1]

Prior to the war the Monroe Calculating Machine Company operated Branch Office Schools in about twenty cities to train operators, but due to the large post-war demand for equipment shortage of stock has eliminated this pre-employment training. However, these courses averaged six weeks in length and the enrollment qualifications were a high school diploma, an aptitude for Arithmetic, Mathematics or Accounting. Training on the machines is still given in hundreds of private business schools and colleges.

On-the-job Training

Representatives of the company instruct employees in offices in the use of the equipment.[2] The training is informal and depends in length upon the difficulty of the job, the mentality of the employee; the instructors teach until they feel confident that the employee can satisfactorily handle the figure work or accounting routine with the equipment.

1. Information from a letter signed by R. D. Bryan, Educational Director, Monroe Calculating Machine Company, Inc., Orange, New Jersey.

2. Equipment manufactured by the Monroe Calculating Machine Company includes Adding-Calculating, Adding-Listing, Accounting, Posting, and Bookkeeping machines.

Qualifications of Operators[1]

> Many good operators of our equipment are purely mechanical in their operation and have had no special education for the job. We do believe, however, that the best operators, those who are apt to be promoted beyond their position, are those who have had special education in, or liking and aptitude for, Mathematics, Bookkeeping and Accounting.
>
> All good machine operators should also possess coordination of mind and muscle. Their mind must work simultaneously if possible with their manual dexterity.

F. National Cash Register Company [2]

The National Cash Register Company does not operate pre-employment schools for several reasons, including the fact that the wide range of machine models would call for many specialized groups within the classes, and also with over 200 branches in the sales organization it would call for setting aside too many machines. However, when there was a serious shortage of operators during the war years, four schools were held in New York and two in Chicago. The students were high school or business college graduates and the approximate length of training one month.

On-the-job Training

This company finds "on the job" training the most effective and this is the type which will be continued in

1. From a letter signed by R.D.Bryan, Educational Director, Monroe Calculating Machine Company, Inc.

2. Information taken from a letter signed by Ewing Stumm, Managers, Sales Training Department, The National Cash Register Company, Dayton, Ohio.

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1. From a letter signed by R.C.Bryan, Educational Director, Monroe Calculating Machine Company, Inc.

2. Information taken from a letter signed by Irving Stumm, Manager, Sales Training Department, The National Cash Register Company, Dayton, Ohio.

the future. Representatives assume full responsibility for installation, which includes training operators, and this process may take from one week to several months depending on the size of the installation. If a trained operator leaves the firm before a replacement has been trained, the company trains the new operator for the employer without charge.

The "All Purpose National Typewriting Bookkeeping" machine consists of a complete standard typewriter keyboard and standard adding machine keyboard. The claim made for this machine is that - "Anyone can master its operation within a few moments because everything about its operation is standard, visible, automatic, or adjustable."[1]

G. Remington Rand Inc.[2]

Remington Rand Inc., one of the largest manufacturers of office machines approaches the training problem through the separate divisions of the company which are as follows: Tabulating Machines Division, Typewriter Division, Accounting and Bookkeeping Division, and Systems Division.

1. From a descriptive booklet published by the National Cash Register Company.

2. Information from George E. Schunior, Director of Sales Education, Tabulating Machines Division, Remington Rand, Inc., dated February 8, 1947.

Tabulating Machines Division

The Tabulating Machines Division, which covers the use of the Automatic Punch, Automatic Sorter and Alphabetical Tabulator, represents the most complicated of the machine processes of any of the machines manufactured by the Remington Rand company. The Education Department of the Tabulating Machines Division is a Home Office department with a director and two assistant directors, one for customer training and one for company training. The customer training school is located in Washington and the school for company personnel in Ilion , New York. The salesman training course is a seven-month's course and mechanical service course if one year's duration.

No training is given directly to the operators by the company except when the situation demands on-the-job training. The customer training program is widely varied and is described briefly as follows:

> In the case of a customer who has an installation of our equipment and is adding more machines, of course he is in a position to do his own training and seldom requires our assistance. However, in the case of a new customer we have to train his personnel thoroughly and we have what we call Systems Service Operators and Methods Engineers; the former are normally women and the latter men, who do this training for our customers. Normally both of these classifications of personnel are college graduates, have years of experience, and have themselves been trained in our school where part of their training is on "How To Train Operators". This training is continuous and varies from one or two weeks on the key punch to several months on the tabulator.

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Customer supervisors are trained at the Washington school in a course varying from two to four weeks depending on the background of the individual. This course presupposes the supervisor's knowledge of actual operation of the machine and has to do with machine room layouts, procedures, card form design, training of operators[1], work scheduling, and controls. At this school also executive and administrative personnel from customers organizations are given a course aimed at an understanding of the possibilities and limitations of the equipment.

> This enables the customer to have within his own organization individuals who understand the basic principles of punched card accounting and can make wiser decisions with reference to what can be expected as results from our equipment.

Accounting and Bookkeeping Division[2]

The Accounting and Bookkeeping Division of Remington Rand is the only division of the company which provides for direct training of operators in schools, and this is limited to training schools for bookkeeping machine operators in the larger branches.

1. Included in Appendix C, pp.149-151, is a copy of Operator Training Methods issued by the Remington Rand Tabulating Machines Institute. This is an excellent example of the modern scientific approach applied to training in the use of office machinery.

2. From a letter signed by A.L. Bateman, Director of Sales Education, Adding-Bookkeeping-Calculating-Machines Division, Remington Rand Inc., 315 Fourth Ave., New York, dated February 15, 1947.

Due to the simplicity of operation of the other machines handled by this division extensive training of operators is not essential. However, on-the-job training is given free of charge to the operators of all machines of the division, this instruction usually being given in the user's office by representatives of the company.

H. Underwood Corporation[1]

The Underwood Corporation maintains schools for training adding and accounting machine operators in connection with its forty-six main branches throughout the United States. Employment bureaus are also conducted for the placement of all types of office workers. With the exception of during the war years the training done in these schools was constantly on the increase. There was some curtailment during the war but the company is "gradually getting back to a situation comparable to pre-war years." The company manufactures the Underwood-Sundstrand Accounting Figuring and Billing machines, and also the Underwood Elliott Fisher machines, the latter consisting of a complete standard typewriting keyboard. The two-month school training, therefore, presupposes a knowledge of typewriting on the part of the trainee.

The company sometimes sends representatives to train employees on the job, but indicates that only a few

1. Information obtained from a letter signed by Lee T. Osmon, Educational Director of the Underwood Corporation, Hartford, Conn., and printed material concerning the Underwood schools and machines.

days are usually required to do the training job with an occasional call-back later to check up.

I. The Atwell Company

The well-known Ediphone transcribing machine is distributed in New England by the Atwell Company, and this company, as well as all other distributors of the Ediphone throughout the country operates an educational program. It is therefore probable that there is some variation in the emphasis on the training programs carried on by different distributors, but that of the Atwell Company may be considered as fairly representative. The greatest emphasis in the program at present seems to be placed upon the cooperation with the secondary schools and colleges in assisting them to build up their teaching programs, and the company for this purpose publishes textbooks and teachers manuals. Some of the schools have fairly large training classes, such as the Girls' High School in Boston which has twenty-three machines.

Small classes (limited to four) are conducted at branch offices and these groups are made up both of individuals who want training before seeking a job and those sent there by their employers. There is no charge for training or placement. The qualifying test for applicants

1. Information from an interview on December 11, 1946 with Mr. T. Gilbert Heterington, Educational Director of the Atwell Company.

covers hearing, English, grammar, proofreading, and especially proficiency in typewriting.

When requested, the company sends out representatives to train employees on the job. These representatives are also employed to determine whether a centralized transcribing department is feasible, and to assist in setting one up if it is deemed advisable. In Boston at the present time there are fifty companies using 3309 machines.

J. Dictaphone Corporation[1]

The Dictaphone Corporation before the war maintained training and personnel services in most of its district and branch offices through the United States. During the war these services were greatly curtailed but expansion is planned during the year 1947. The company also cooperates with high schools by setting up training plans, and has standardized tests for the selection of students who may be expected to complete the course in fifty hours.

> Experience indicates that those pupils requiring more than fifty hours will be unable to develop a marketable skill until they have satisfactorily completed remedial drills in the basic knowledges.[2]

1. Information from a letter signed by Ramona Beall, Director, Educational Division, The Dictaphone Corporation, 420 Lexington Ave., New York, datedDecember 11, 1946, and printed material concerning courses.

2. From "A Revised Scoring of the Minimum Essentials Test" included in Dictaphone Portfolio of Teaching Aids published by the Dictaphone Corporation.

The Dictaphone company requires candidates for instruction to pass either the Tedens or the Odell test, with a score of 75% or better, those passing the Odell test being rated as "B" students and those passing the Tedens test as "A" students.[1]

Special Qualifications

Tests and simple research support the following conclusions with respect to desirable qualifications in the Dictaphone transcriptionist.

> A Dictaphone transcriptionist or secretary must possess the same qualifications that a good stenographer possesses, plus a few additional attributes. For example, she must be able to spell accurately and without constant reference to the dictionary; she must possess language sense to an even greater degree than the average stenographer; and must possess a high degree of coordination and the ability to concentrate upon the job in hand...The Dictaphone transcriptionist or secretary hears the dictation for the first time when she prepares to transcribe it. If her language sense, keenness of perception and other requisites are not definitely up to par, she will not make a highly successful Dictaphone transcriptionist or secretary.

On-the-job Training

Representatives of the Dictaphone Corporation also train personnel in customers' offices and customers frequently send employees to the company schools for instruction.

1. The Tedens "Minimum Fundamentals Test" consists of two parts: Part I - English, covers language usage, and Part II is a typewriting test, first for straight copy and second for letter set-up. The Odell Minimum Essentials Test contains a simple word usage test, a dictated 25-word spelling test and a typing test.

The length of time required for training employed people is substantially less because of their familiarity with the language of the business and all of the details and routine of transcribing the specific correspondence. Other factors such as adaptability, education, background, etc. enter into the length of time required before the individual will reach maximum efficiency on the dictaphone.

The importance to all users of office equipment of the training programs, and the selection of trainees for such training, conducted by the manufacturers as described in the foregoing pages, is obvious; but to the larger company, to which the use of the more expensive and complicated accounting and tabulating equipment is limited, the benefit of this carefully planned scientific approach which is undoubtedly on the increase, cannot be overlooked or underestimated. While transcribing machines are widely used by small offices as well as large, the growing acceptance of the idea of centralized transcribing departments in large companies, with consequent increasing demand for trained operators, presents a selection and training problem in itself. In helping to solve this problem, and thereby decreasing the employers' training costs, the manufacturers' training programs are of decided significance.

CHAPTER VI

POST-EMPLOYMENT TRAINING

For twenty or thirty years previous to the start of World War II, there apparently had been little change in post-employment training methods for office workers except those necessitated by the installation of new types of office machinery. With the start of the war there was a new emphasis on training. As workers became scarce, selection became less important and office managers as well as industrial heads began to consider the problems involved in training in the quickest possible way whatever personnel could be found to fill the ever-increasing vacancies in the offices of the war industries as well as to take care of the increased clerical needs of all businesses.

Even though the pre-employment training of the routine office worker has developed technical skill and furnished a fundamental knowledge of business practice, there still remains much to be done after he or she is on the company payroll, to acquaint the new employee with company policies and procedures and with the details of the specific job. This divides itself into two parts: first, the induction training or acquainting the employee with the company in general, and secondly, actual training for the job which he is to undertake.

CHAPTER VI

POST-EMPLOYMENT TRAINING

A. Introduction to the Company and to the Job

The importance of introducing the worker to his job has been stressed ever since scientific personnel procedures have been in existence. The special application of this principle to the office worker includes giving the worker a background of the company's history, products, processes, organization, etc., and this is effected in different ways such as the use of lectures, pamphlets, employees' handbooks, moving pictures and trips through the plant. This part of the employee's training is in most companies the definite responsibility of the Personnel Department.

There has been a trend toward emphasizing the psychological side of this induction training during the last decade, one suggestion being described as the importance of making the worker feel at home; the emphasis on this during the war years was undoubtedly due to the increasing importance to the employer of keeping the worker. At the 1943 Conference of the National Office Management Association, where a discussion of induction training took place, Orville Frye of the Metropolitan Life Insurance Company, pointed out the fact that more employees leave during the first few weeks of employment; he attributes high labor turuover, absenteeism, tardiness and general inefficiency to lack of proper introductory treatment during

A. Introduction to the Company and to the Job

the first few weeks.[1] The first step in the process of "channeling the worker's attitude" takes place in the employment interview, which, if successfully conducted, results in the worker feeling that he has received friendly, businesslike treatment, and that he has been appointed to a position which will prove mutually beneficial to him and to the company. Following this, it helps if the person who directs him to his work place is one who is thoroughly conversant with, and able to answer questions concerning, company policies; this person should also be one who possesses tact and diplomacy and the ability to impress the new employee with a feeling of his friendly interest.[2]

After the new employee has reached the department in which he is to work the supervisor should welcome and introduce him to all fellow-workers. It should be arranged that some will take him to lunch the first day or two. A follow-up several months after the employee has joined the company to ascertain whether he likes his job, his surroundings and his supervisor is an effective means of control.[3]

All of these methods are aimed at building up the "right attitude" on the part of the employee since this

1. 1943 Conference Proceedings of the National Office Management Association, p. 108.

2. Ibid., p. 109.

3. Ibid., p. 111.

"right attitude" is the foundation for success in any program. This attitude should be a matter of habit, not only with all administrative and supervisory people but also with each and every clerk. Through the right attitude the supervisors and fellow-employees are able to give the new clerk a confidence in the management's capacity to understand him. If the office manager will take the time to properly organize a definite program for making the new employee feel at home, thus "channeling" his attitude, savings in the form of reduced turnover, absenteeism and tardiness will accrue.[1]

A 1942 publication sponsored by the American Management Association, "How to Train Workers in War Industries," defines the purpose of the induction program as (1) to give the new employee confidence in himself, (2) to give him confidence in the company, (3) to give him an understanding of his job, and (4) to give him an understanding of the company's personnel policy.[2] The methods of attaining these objectives differs in different companies, as the program may be formal or informal. An informal procedure, using the grapevine system requires the cooperation of key personnel who thus become "opinion moulders."[3] More formal approach

1. 1943 Conference Proceedings of the National Office Management Association, p. 112.

2. How to Train Workers in War Industries (New York, Harper and Brothers, 1942), p. 183. (These four purposes based on an extensive investigation in industry made by George A. Yeomans.)

3. Ibid., p. 184.

methods are suggested also, such as a brief talk by a top executive to groups, a "welcome" handbook, which the employee reaes first and then uses as a basis for discussion in an interview between himself and the department head. Other means of acquainting the new worker with the company are pay envelope inserts, informal letters sent to the employee at home, bulletin board postings and special bulletins.

B. Training for the Job

Industrial training has always been accomplished by one of two methods: (a)vestibule school, and (b) on-the-job instruction. The vestibule school is less adaptable for office training for several reasons. As W. H. Leffingwell points out, teachers could not be found with sufficient knowledge of the hundreds of different office positions, since the fundamental units cannot be classified into convenient units, and the time available for instruction in many details is too short. The consequence is that the vestibule school, if used at all in connection with office work, gives but a brief introduction to the rules and policies of the company with possibly a "meager training in work habits for a few elementary jobs."[1] This leaves training of the employee while actually working on the job as the best method for the training of the office worker.

1. W.H.Leffingwell, "Training Clerical Workers on the Job," in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p. 808.

Leffingwell defines training as the "development of habits," and in the case of office workers the development of "clerical working habits" in particular.[1] He aptly criticizes the old method of "training" office workers, which was to give the clerk a task, a few moments instruction and leave him to his own devices; if he made errors he was disciplined or corrected.[2]

With respect to specific steps in training clerks Leffingwell (1931) states (1) that the work must first be explained to the clerk in such a way as to impress him with

> (a) the purpose of the work, (b) the relationship of the operation to other work, (c) the relative importance of the various details of the job, and (d) the manner in which it is to be done.

(2) Following this, the best arrangement of the work and work-place should be taught and this involves a study of the job to discover these facts. (3) The best motions follow this after a careful analysis of the work to be accomplished. (4) Next is the correct sequence of the motions at a standard rate of speed. (5) The habit of speed must then be developed. (6) Accuracy must accompany the last two

1. W. H. Leffingwell, "Training Clerical Workers on the Job," in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p. 807.

2. William H. Leffingwell and Edwin M. Robinson, Textbook of Office Management (New York, McGraw-Hill Book Company, 1943), p. 327.

steps.

> The worker must be taught the points at which accuracy is of the greatest importance, and alsl where extreme accuracy is not required.[1]

He points out in this connection that a clerk who is too meticulous may become a liability.[1]

It is doubtful if such detailed steps have been followed by many organizations in training their clerical workers but they do indicate a scientific approach to office training. However, a theoretical statement made by Mr. Leffingwell in an early textbook on Office Management (1925) seems as applicable today as it was at the time it was written:

> The difference between the average worker in any occupation, and the expert, is almost entirely a matter of training, yet the difference in their output is enormous, but despite this fact there are many offices which do not have any definite, organized system of training, and plead in extenuation that it costs too much. The large and successful companies, however, do not look upon the matter in this light, and this is probably one of the many reasons why they are large and successful.[2]

1. Who Shall Train

Following recognition of the fact that planned training should be given to clerical workers the question arose as to who should do the training. Leffingwell states

1. W. H. Leffingwell, "Training Clerical Workers on the Job," in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p.810.
2. Ibid., p. 812.

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1. W. H. Lefingwell, "Training Clerical Workers on the Job," in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p. 810.
2. Ibid., p. 812.

that the size of the office should determine who shall do the training; in the small office it would probably be done by the supervisor himself, in the larger office by the departmental supervisor, or in very large departments by regular clerks.[1]

The necessity of having supervisors train soon led to the discovery that many supervisors, who were fully qualified workers themselves and had the personal qualifications necessary for a supervisory job, were quite inadequate when it came to teaching because of lack of knowledge of teaching methods. This has led, in the office as well as in the factory, to the emphasis on "supervisor training" which has been apparent during the last fifteen or twenty years.

Some supervisors feel that an experienced clerk, because of his familiarity with detail can train more efficiently than others but the clerk so selected should be able to teach. Another important consideration is that the teacher should be interested because lack of interest in teaching may lower the newcomer's morale. In this connection it is well to avoid having training done by a person about to leave the company.[2]

1. W. H. Leffingwell, "Training Clerical Workers on the Job" in Handbook of Business Administration (New York, McGraw-Hill Book Company, 1931), p.811.

2. Henry E. Niles and Mary Cushing Niles, The Office Supervisor (New York, John Wiley & Sons, Inc., 1935), p. 19.

At the 1934 Conference of the National Office Management Association, Albert E. Peterson[1], in discussing special problems in office training, stated that the training problem was more of a selling problem, i.e. to sell the training idea to the department heads.

> In many cases the acceptability of the training idea on the part of the supervisor or department head is directly proportional to his understanding of the training process and his acquirement of training technique.[2]

In 1940 I. O. Royse, of the Ralston Purina Company, taking part in a discussion of the training problems involved in office work, states that, since the responsibility for output in a department lies in the department head or supervisor, it follows that the training of the clerks should be done by the supervisor or by someone appointed by him. In regard to the selection of the proper person to do this, the qualifications which he lists as essential are the following: (1) a good teacher, (2) know things which are to be done, (3) know how things should be done, (4) be able to demonstrate the best method of doing the work, and (5) have adequate time for doing the training properly.[3]

1. Albert E. Peterson was at this time Superintendent of Training and Education of the Commonwealth Edison Company, Chicago.

2. 1934 Conference Proceedings of the National Office Management Association, p. 94. See also Appendix A, infra pp. 131-133 .

3. 1940 Conference Proceedings of the National Office Management Association, p. 14.

2. Changes due to the War

With war came the necessity of training people more rapidly because of increased turnover, the demand for more employees and the inadequate supply of experienced workers. In some companies this necessity resulted in a new type of training procedure, and in almost all industries and businesses there was an inevitable increase in the amount of training already being undertaken. Office machinery manufacturers cooperated as much as possible. In one company, for instance, the demand for an increased number of machine transcribers was met by the Dictaphone Corporation actually training girls on the employer's work in their own offices.[1]

A summary of various methods of speeding up training as suggested at the 1941 National Office Management Conference includes the following: (1) Decreasing the number and complexity of things to be taught by breaking jobs down into skilled, semi-skilled and unskilled groups; in other words, greater specialization, so that there would be no waste of the skilled persons' time performing simple tasks. (2) Careful planning effected by use of the job analysis, (3) Working out of job procedures in order to train people in uniform methods, an essential of efficient operation.[2]

1. 1941 Conference Proceedings of the National Office Management Association, p. 42.

2. Ibid., p. 44.

L. C. McKenney of the Hood Rubber Company in Watertown, Massachusetts, made the following statement at this same conference in 1941:

> The shortage of office personnel can be corrected only by recruiting and training inexperienced new employees and by increasing the efficiency of the present office force...those who have been hiring trained office workers and confirming selection by tests or work samples that measure acquired skills will have to change their technique. We are going to be interested in potential or inherent abilities and intelligence.[1]

He goes on to indicate that effective training will depend first upon adequate job analysis which will automatically lead to improvement in methods. He also predicts that as a result of improved methods and the introduction of motion time analyses and standards, incentive wage systems for office workers may become more common.

> The office operations performed under incentive wage methods take on a close similarity to factory jobs in many instances.[2]

3. Application of the Training Within Industry Program to Office Work

The principles of the Training Within Industry Program, prepared by the War Manpower Commission, have been widely applied in training office workers during the war. The objective of this program was to convince industrial

1. L.C.McKenney, "Personnel Problems in a Mobilizing World," 1941 Conference Proceedings of the National Office Management Association, p. 12.

2. Ibid., p. 13.

management that the training of "people" was a major responsibility and that well trained workers definitely led to "increased output of a higher quality."[1]

Mr. Mudge[2] points to the ever-increasing recognition of the fact that production is directly dependent upon the acts of people and that production in a broad sense includes figures, statistics, reports, financial statements, payrolls, etc. Even though an office has all modern equipment it is the people who actually produce the final results.

The T.W.I. program served as an aid to all who had supervisory responsibilities. Supervisory responsibility is broken down into five major parts:

> (1) knowledge of the job, (2) knowledge of the responsibility, (3) skill of instruction, (4) skilled planning, and (5) skilled leadership.[3]

To aid in the development of the last three, Job Instructor Training, Job Methods Training and Job Relations Training Programs have been assembled from practical experience. Job Instructor Training covers just how a man or woman should be broken in on the job. First the limitations of the "telling" and "showing" process are pointed out.

1. Sterling W. Mudge, "Applying T.W.I. Program to the Office," Office Management Series, No.102 (American Management Association, New York, 1944), p. 32.

2. Mr. Mudge at this time was District Director of Training Within Industry Service for New York City.

3. Ibid., p. 32.

Details of the four-step plan of getting a man to do a job are carefully analyzed.[1]

At the 1945 Conference of the National Office Management Association, Harold R. Bixler, Personnel Director of the Mutual Life Insurance Company of New York, points out the fact that business and industry are making wide use of the "Training Within Industry" program originally prepared by the War Manpower Commission.[2]

The foregoing does not attempt to explain in detail the T.W.I. plan but merely illustrates the application of scientific principles to the industrial training problem, which carried over into office training programs.

The General Foods Company applied the T.W.I. method to the training of all their office workers throughout their organization.[3] The care and completeness with which this training plan was developed and administered is significant, and interesting in connection with the office training problem.[4]

1. The four steps in the Job Instructor Training plan referred to are: (1) preparation,(2)presentation, (3) performance carry out, and (4) follow-up. (From How to Train Workers for War Industries(New York, Harper & Brothers, 1942), pp233 ff.

2. 1945 Conference Proceedings of the National Office Management Association, p.31

3. "The General Foods Program of Office Training," Office Management Series, No.109 (New York, American Management Association, 1944) pp.1-28.

4. See Appendix A, pp.134-135.

A survey of what was written concerning training of office workers during the war years in general seems to indicate a trend toward the adoption of a more scientific approach to the training problem, and in some cases, as indicated in the foregoing, there has been a tendency to increased specialization of task in order to simplify training methods.

CHAPTER VII

SUMMARY OF SIGNIFICANT TRENDS

Previous to 1929, when general business was on the uptrend, the changes which had taken place in selection and training methods apparently had followed the general trend of the scientific handling of all personnel problems. The most important influences on these two phases of the office personnel problem were job standardization, which accompanied specialization, and the adoption of job analyses and specifications, which served as the foundation of scientific selection and training.

During the depression years, when the unemployment situation provided unlimited recruits for all jobs, the greatest emphasis was upon the improvement of selection procedures. During these years, the employers felt the necessity of keeping down costs by choosing from the large number available the best qualified employees, and those who would require the least amount of training at company expense. Government supported agencies, such as the W.P.A., and other organizations interested in welfare, such as the N.Y.A., had the time to study selection techniques in connection with the analysis of individual causes of unemployment, and public funds were appropriated to further such investigations. With the uptrend in business in the late 1930's, the interest in

developing new testing techniques seemed to diminish and after the start of World War II, in 1939, with the consequent reversal of the labor situation which had existed for over ten years, the emphasis, so far as the personnel departments of large companies were concerned, shifted to the training of all kinds of workers. The employer became interested in finding out how to train, in the quickest possible way, the available worker to perform the necessary work. Methods of training office workers followed the trends in industrial teaching methods, as indicated by the adaptation to office training of the Training Within Industry Program, and this was accompanied by increase in the already decided emphasis placed upon the training by supervisors, and the adequate preparation of these supervisors for the teaching program.

A. Changes in Specific Selection Techniques

The changes which took place in interview methods and the use of the application blank are not particularly significant except that they reflect the stress on the scientific development of these techniques. In all changes advocated by psychologists and personnel experts during this period, there was an increase in the definite scientifically planned approach to the interview as evidenced on the objective side by the development of job analyses used as bases for the interview, and on the subjective side by the psychological studies made for the improvement of the interview.

Planned interviews and the training of the interviewer were widely advocated and to some extent, at least, adopted; the purposes of the interview were clearly defined, and to these ends, were selected definite types of questions directly aimed at discovering those qualities and capacities of the worker required for the specific job as previously indicated in the requirements set forth in the job analysis. The application blank showed a tendency to refinement by the elimination of unnecessary information and by the inclusion of the questions which had been found, by scientific study, to be of the greatest significance for the kinds of jobs to be filled.

The greatest change in selection techniques, so far as office workers are concerned, occurred in the use of tests for selection and placement. With the use of job analyses in selecting the criteria for validating the tests, it was possible, by continuous experimentation, to discover just which tests were best for each particular situation. Office jobs were broken down into specific categories and the qualities and characteristics, as well as the technical ability and knowledge required for each job, were studied by psychologists. In this connection, there appear to be differences in the criterions of success used in validating tests. For instance, in validating mental alertness tests, Dr. Marion Bills plainly states that the criterion is "promotability", as measured by the ultimate level of the

job reached by those who were selected in establishing the criterion. However, the effectiveness of other tests has been measured by the workers' quantity output, where this is possible of measurement. A frequently used method of validating tests to be used for selection is giving of the same tests to a number of employees on similar jobs and comparing the test results with the supervisor's rating as to the general effectiveness of these individuals in their jobs, or with the supervisor's appraisal of specific aspects of the workers progress or attributes.

Uniformity in the criteria used is by no means essential, but it is essential that the choice of criteria for a test be definitely related to the kind of job to be filled, and, to a certain degree, to the opportunities afforded for advancement. This complexity in itself points to the recognized necessity of having a properly qualified and experienced person in charge of developing any kind of testing program. In the opinion of the writer, tests or other selection techniques used in placing routine office workers in large companies should also attempt to determine in some way whether or not the applicant is adaptable to routine repetitive work.

There is a wide variation in the selection techniques in effective use by different companies, and also im the hiring of office employees. As shown by the different selection programs outlined in Appendix A, while one company

selects employees to test by means of a preliminary interview, another tests first and makes the final selection by interviewing those who have successfully passed the prescribed tests. This lack of uniformity is not surprising when one considers the difference in organization set-ups, the varieties of jobs and the wide range of responsibilities of key executives connected with the personnel procedures. This might also be affected by the number of jobs to be filled in relation to the labor market at the time. Apparently there is no "one best way" to conduct this part of the program and each company determines its own procedure by finding out what is most effective in the individual case.

B. Changes in Training Programs

Pre-employment training has necessarily followed the tendency toward specialization. We find the secondary schools studying the needs of employers to decide upon what courses to offer and to determine how many and what types of office machines to acquire for use in Office Practice programs. Bookkeeping, stead of being taught as an end in itself, is now taught as a foundation for machine bookkeeping, or merely as background for the ledger clerk who may aspire to promotion to a supervisory job. Girls are being trained to operate expertly duplicating machines of different types, as well as all kinds of calculating and bookkeeping machines and transcribing machines, in order to keep pace with the demands

for such workers.

The training programs sponsored by the manufacturers of office machines are especially significant because these companies not only supply training but, by using some discrimination in the selection of trainees, are doing part of the selection job also for the ultimate employer. The fact that many of these manufacturers also send their own well-trained representatives to teach customers' employees on the job when necessary is also of significance in the saving of training expense to the employer. It is quite probable that within the next few years there will be a great expansion of such educational programs, both because of the increased mechanization of office work, and because of a return to competitive conditions among manufacturers of office equipment. Already the attention which has been given to all phases of the training program indicates that the manufacturers themselves recognize its value as a definite aid in selling their increasingly complicated equipment.

Post-employment training has become more scientific as job analysis is more widely used as its basis. Emphasis on the training of workers by supervisors, and the development of programs to train supervisors to teach, followed the trend of similar programs in the factory. Indications are that the number of so-called clerical workers will increase,

and, for this reason, training should continue to be a significant factor in the personnel program as applied to office workers. No amount of pre-employment education can relieve the employer of this responsibility; certainly no large organization can fail to recognize the important contribution made to the subsequent success of the employee, both from the standpoint of the company and from that of the individual, both by a proper induction treatment and by adequate instruction for the specific job.

It is interesting to consider these problems in the light of present-day conditions. At present the greatest shortage of any kind of worker probably exists in the supply of young girls who are willing to take routine office jobs at the present comparatively low salaries paid for this type of work. This in itself makes it essential for the large company not to overlook any qualified employee. To do this without lowering the standards set up for selection is not an easy task. It may be, however, that the standards should be changed or modified to keep pace with increasing specialization. Undoubtedly the labor situation will gradually adjust itself so that the supply of recruits for office work will be adequate, but the importance of care in selection will be likely to continue, especially if decreasing volume or narrower gross profit margins make it

necessary for the large organization to scrutinize more carefully the cost of its service functions. It will be interesting to see whether the emphasis during the next few years will shift again to selection of the better qualified worker, or to the hiring of comparatively inexperienced workers in order to economize on the initial salary with more money later spent for training. The only other alternative would be a decrease in efficiency, and it is self-evident that standards of efficiency in the office must be maintained or improved if the clerical needs of large organizations are to be adequately met.

APPENDIX A

SELECTION AND TRAINING PROGRAMS

The Jewel Tea Company[1]

The program of the Jewel Tea Company in connection with the selection and training of office workers is outlined as follows:

1. Honor students selected from local high schools are placed in the mailing section, Ediphone typing section, central computing section and central file section for training.
2. Employees are promoted from mailing section to expense accounting section, where they receive additional training.
3. College graduates are placed in expense accounting section for training.
4. Employees are encouraged to attend night school.
5. Employees are encouraged to use the company library which is maintained for training purposes.
6. Speaker programs are planned.

Selection

Each year honor students from local high schools are interviewed in an attempt to place them in position for which they have natural aptitude based on subjects they liked best and in which they received good grades.

Application Blank

A complete application blank is first filled out by the applicant. This covers work history (13 questions about each job), health history of applicant and brothers and sisters, educational history (10 questions mostly about

1. C. L. Stivers, "A Selection-Training Program," 1931 Conference Proceedings of National Office Management Association, pp. 58-60.

APPENDIX A

SELECTION AND TRAINING PROGRAMS

The Jewel Tea Company

The program of the Jewel Tea Company in connection with the selection and training of office workers is outlined as follows:

1. Senior students selected from local high schools are placed in the waiting section, Robbins typing section, central accounting section and central file section for training.

2. Employees are promoted from waiting section to expense accounting section, where they receive additional training.

3. College graduates are placed in expense accounting section for training.

4. Employees are encouraged to attend night school.

5. Employees are encouraged to use the company library which is maintained for training purposes.

6. Speaker programs are planned.

Selection

Each year honor students from local high schools are interviewed in an attempt to place them in position for which they have natural aptitude based on subjects they liked best and in which they received good grades.

Application Blank

A complete application blank is first filled out by the applicant. This covers work history (15 questions about each job), health history of applicant and brothers and sisters, educational history (10 questions mostly about

J. C. L. Stivers, "A Selection-Training Program," 1931 Conference Proceedings of National Office Management Association, pp. 88-90.

grades) and interest history (16 questions).

Interview

The interviewer answers seven specific personality questions, which are:-

(1) Is he alert?
(2) Has he learned from experience?
(3) Is he attentive?
(4) Does he give a consistent intelligent, well-related story?
(5) Is he suggestible?
(6) Is his memory good?
(7) Does he show good common sense?

The interviewer also records the motor characteristics, temperament, facial characteristics or traits of self-expression. Then follow eleven questions concerning home problems. By then the interviewer is able to determine whether the applicant is the type desired and has the right background, and tests are given to the acceptable candidates.

Testing

Selections of from two to five of the following tests are made, the tests being chosen for each applicant depending upon the type of job to be filled:

1. Jewel Tea Co. Inc. Clerical Tests [1]

2. Benge Omnibus Test (Score 70-90 necessary)

1. The test includes twenty questions; the number to be answered depends upon the training and previous experience of the applicant, ranging from high school bookkeeping only to a four-year college course in commerce.

grades) and interest history (10 questions).

Interview

The interviewer answers seven specific personality questions, which are:-

(1) Is he alert?
(2) Has he learned from experience?
(3) Is he attentive?
(4) Does he give a consistent intelligent, well-related story?
(5) Is he suggestible?
(6) Is his memory good?
(7) Does he show good common sense?

The interviewer also records the motor characteristics, temperament, facial characteristics or traits of self-expression. Then follow eleven questions concerning home problems. By then the interviewer is able to determine whether the applicant is the type desired and has the right background, and tests are given to the acceptable candidates.

Testing

Selections of from two to five of the following tests are made, the tests being chosen for each applicant depending upon the type of job to be filled:

1. Jewel Tea Co. Inc. Clerical Tests I
2. Bangs Omnibus Test (Score 70-80 necessary)

1. The test includes twenty questions; the number to be answered depends upon the training and previous experience of the applicant, ranging from high school bookkeeping only to a four-year college course in commerce.

3. Typing Test

4. Dictation Test

5. Spelling Test

6. Punctuation, Grammar Test

7. Comptometer Test

8. Letter Writing Test

9. Range and Information Test

For example, male and female clerks take tests 1, 2, and 9 . Typists who will remain typists take 3 and 9. Typists who will train for Ediphone take 3, 5, 6, and 9, while typists who will train for secretarial jobs take 3, 4, 5, 6, and 9. Comptometer operators take 7 and 9.

Girls who prove to be good clerical workers and who wish to take up either comptometer work or ediphone-typing work go to a business college for training, and when ready for promotion they are transferred.

Atlantic Refining Company[1]

This company is a leader in the use of psychological tests for office employees. Due to the competition in the wake of depression it felt the need for increased

1. E. D. Bartlett, "Aptitude Tests and the Selection of Office Workers," Office Management Series No. 84 (New York, American Management Association, 1938) pp. 4-14.

efficiency in office work making determination of the potentialities, rather than only present achievement, of office workers important.

Applicants are given one or more tests such as the Benge Clerical test, Minnesota Clerical Test and Otis Tests of Mental Ability, O'Rourke General Classification Test. Those whose test scores fall below certain levels are considered disqualified. The level used is based on experience but to a certain extent is modified by "market conditions." After ascertaining that the individual can meet minimum requirements the desirability of the candidate from the point of view of future growth is considered; in this interests are an important factor and the Strong Vocational Interest Blank and other questionnaires have been used. Mr. Bartlett states:-

> I should like to summarize my experience with tests by saying that they can be used to advantage not only as a time saver at the time of employment and as a selection measure in case of promotion but also as an invaluable aid in guiding employees both as to choice of vocation and in assisting them in planning further education... In closing I believe that the question we should ask ourselves is not "Can we afford to use tests?" but "Can we afford <u>not</u> to use tests?"

Kimberly-Clark Corporation[1]

It has long been the policy of this company to select office workers from the rank and file mill employees, believing that knowledge of the product, understanding of the terminology peculiar to the industry, and acquaintance with foremen and other supervisors are of considerable importance in office jobs.

Recruiting

A list is kept of production employees interested in clerical work. This list is compiled by three means - questionning concerning interests when hiring, progress reports which emphasize future job preference, and those who ask on their own initiative or as a result of notices posted concerning office vacancies.

Testing

The aptitude test is considered most important since experience indicates that persons with little aptitude and much experience display more clerical ability at the time of testing than persons with a great deal of aptitude and little experience.

> Therefore in companies having comparatively extensive training programs and in which promotions are made from within it is more important to know the aptitude of an applicant than to know his ability.

1. C. E. Jurgensen, "Selecting Office Workers from the Factory," Office Management Series, No. 97, (New York, American Management Association, 1942), pp.6-17.

The situation today (1942) is that qualified clerical applicants are becoming scarcer and so in spite of increased work there is apt to be a decreased force, emphasizing the importance of having persons able to turn out more and better work.

The clerical analysis test given applicants is scored on three factors: (1) accuracy in doing routine work, (2) speed in doing routine work, (3) problem solving ability. Scores are combined to yield a single index called "office aptitude". This test has been developed over a period of years and vigorous statistical treatment has made it a test which does an excellent job of predicting success in office work within the Kimberly-Clark Corporation. Such a test is built up with the thought in mind that a test to fit the needs of the company must not only be practical but also appear practical to applicants, employees and supervisors.

A typing analysis test was developed after finding that existing tests failed to predict success for stenographic and secretarial positions in the company. Standardized tests failed to measure the complete industrial typing job, and failed to measure speed and accuracy in the mechanics of handling paper, etc. and also failed to reveal the ability to perform the non-mechanical part of the job, such as ability to follow instructions, skill at

noting and correcting errors, and ability to type diverse kinds of material with speed and accuracy and in good form. Over a period of years the company developed a highly satisfactory type of test consisting of five carefully selected work samples.

A shorthand test also was developed to fit the particular needs of the business. This is a 200-word test, dictated as rapidly as the applicant can take. The test situation is made to resemble the job situation in that the applicant can ask the dictater to slow down, or repeat, as speed is considered less essential than accuracy.

A spelling and vocabulary test was developed which is especially useful in selecting dictaphone operators.

Testing for comptometer operators consisted of a speed and accuracy test. If not trained, arithmetic tests consisting of 75 problems were given to test aptitude for this kind of work.

Interviewing

Interviewing is the third step in selection, which narrows the field. The preliminary interview, of approximatly 30 minutes, assembles, coordinates and evaluates all data considered pertinent to success in office work. No applicant is accepted or rejected on the basis of a single factor. The placement interview not only determines whether the applicant would be successful in

office work but whether he would be more successful in some other type of work. In the interview the results of tests are discussed with applicants and weaknesses pointed out.

Final Selection

Final selection is made by department heads from among the applicants, who have been considered acceptable by the interviewer.

Training

Since applicants are selected on the basis of aptitude, training is usually necessary. When a shortage of office help exists, classroom instruction may precede on-the-job training. For instance, when comptometer operators were needed a class met from four o'clock in the afternoon until ten o'clock, for ten weeks, with a company instructor. Trainees were chosen by clerical aptitude and arithmetic ability tests. It was discovered that those trained in the class were considerably faster and more accurate than those trained on the job.

The Lockheed Company[1]

Since 1937 Lockheed has tested almlst 300,000 applicants and from these has selected its personnel. In

1. R. Randell Irwin, "Lockheed's Full Testing Program", Personnel Journal, September 1942 (Vol.21,No.3) pp.105-109.

face of the National emergency the company had to fill many skilled jobs with men whose tests indicated undesirable temperament. In 1941 two out of every three workers that the company had to let go were among those who had shown adverse test results.

Lockheed now gives all qualified applicants at least two tests: The Otis Test of Mental Ability and the Humm-Wadsworth Temperament Scale. Job specifications also may call for one or more trade, mechanical or clerical aptitude tests.

The intelligence test is used as an aid in placement. The temperament scale, as used by Lockheed, attempts to predict the behavior of the applicant in any placement that the company might make. The scale is composed of 318 questions representing a breakdown of temperament into five fundamental components: self-control, self-interest, emotion, imagination and inspiration. Too much or too little of any of these factors usually shows why an employee does not work out at a job. No one of these components should be judged by itself but rather in its interrelationship to the other components and to the validity of the responses. The responses themselves have weighted values to the degree that they indicate tendency toward any of the fundamental components. These "raw scores" are totalled and recorded on a "Profile" or psychograph which gives a visual picture of

the man's temperamental assets and liabilities in terms of "strong" "borderline" or "weak" values. The varying proportions of these values are what make people differ. From these values Lockheed's temperament analysts measure the disposition and mental well-being of its applicants and predict their behavior under placement conditions.

Trade tests attempt to measure the knowledge of the applicant so that when his test skill is weighted with his experience he may be placed in the proper grade of job. Clerical aptitude tests were devised that would give objective prediction for the routine filing job or the most exacting secretarial position. The results of these tests are at the same time diagnostic and comparative. A woman hired as a clerical typist might improve her shorthand and typing, take a test later and become a stenographer. The Lockheed clerical aptitude tests, which include typing, clerical typing, stenographic, and filing are not available for circulation.

Commonwealth Edison Company[1]

The essential requirements, in the opinion of this company, in those selected for office work are a fair command of English, practical knowledge of arithmetic, a

1. Albert E. Peterson, "Training Problems in the Office of a Public Utility Company," 1934 Conference Proceedings of the National Office Management Association, pp.87-94.

proper attitude with respect to coordination and cooperation, and an appreciation of the need of being of service.

The company training program consists first of the imparting of the general company information and secondly, of job training in specialized operations. Examples of this supplementary training are instruction in specialized correspondence forms and the business terminology, and accounts receivable bookkeeping practices. Job training activity is under the guidance of the Manager of Industrial Relations, who advises departmental groups concerning their training problems, while the actual training is done by the supervisory force.

The conference method is the most commonly used since most employees are adults. Before job training can be carried on effectively it is felt that a job manual is desirable. Since job training is a recent development, retraining of old employees is often necessary. The first step is a survey of the group and an analysis of the work, carried on in collaboration with the supervisor. Text material prepared by them is discussed with employee groups before adoption, thereby making the employees feel that they have a definite part in the preparation of it. The job manual adopted is then used as a guide for training new employees, as well as being a handy reference for old, and a means of preventing wide deviations from accepted practices.

Preliminary meetings of supervisors are necessary in order to instruct them in the training methods as well as the principles of collecting and organizing material for the job manuals. In most cases it is apparent that supervisors are not familiar with the art of imparting the knowledge they have, either by means of spoken word or in written manuals. Hence the biggest problem in job training lies not with the employee but rather with the supervisor. On the basis of experience during the past ten or fifteen years, offices have changed their attitude with respect to the promotion of routine workers to supervisory positions. There is a growing tendency to give more weight to such things as teaching and management, the value of general knowledge, and less emphasis on efficiency in performing the routine work. "In the years to come, supervision should be improved through selection."

For the present, supervision requires coaching because of the fact that so many supervisors have attained their jobs through their ability to perform highly specialized operations. In spite of shorter working hours the demands for job training have increased, and department heads and supervisors now feel that training is a practical necessity.

The General Foods Program of Office Training[1]

In the case of this company the increase in turnover made a training program essential. The necessity for it was revealed by an attitude survey which brought out the fact that only 39% of the employees indicated an affirmation of the following statement:

> When I first started the job I am now on I got all the training and help I needed in order to learn the job properly.

It was decided to use the T.W.I. Job Instructor Method as a foundation and to build upon it to fulfill specific needs. Then, after developing a program, it would be possible to furnish all the facilities for district office managers to use in training all their people to make job breakdowns.

The primary objectives of the program were as follows:

1. To train the district office managers to train.
2. To train the district office managers to make job breakdowns - the tool which would do the training job.
3. To train district office managers to teach their clerks how to make a job breakdown.

The training plan followed the basic training formula of Job Instructor Training, i.e. to prepare, present, practice and follow-up.

1. "The General Foods Program of Office Training," Office Management Series, No. 109 (American Management Association, New York, 1944), pp.1-28.

Having called together the district office managers for each division the "prepare stage" consisted of convincing them of the necessity for training. The "present" stage enumerated the benefits to the worker when the plan was in operation. The factors which produce satisfaction on the job were pointed out.

The idea of training through job breakdown was thoroughly impressed upon the managers as well as the effectiveness of the job breakdown in eliminating useless operations. Slidefilm was employed in teaching how to make a job breakdown.

Then actual practice in job breakdown was afforded by the method used in T.W.I. A trainer and learner were appointed from the group and the rest of the group criticized the method.

In the final address to the group, George A.Kolman pointed out:

> With this meeting we bring to a close a program which many organizations would regard as definitely unique. They might even look askance at it and doubt the value of it because they think clerical workers are minor cogs in a big machine.

However, this company recognizes the importance of the clerical workers in the district offices and regards them as production workers. The "train the trainers" method was adopted so that the entire program could be carried intact to the clerical workers in the district offices.

APPENDIX B

Results of a questionnaire devised to discover the attitude of office workers' toward their jobs and investigate the possible relationship between these attitudes and their opinions as to whether their jobs are mentally or physically fatiguing or monotonous.

Explanation of the Questionnaire[1]

Since the study of fatigue is a subjective matter a questionnaire was devised in an attempt to get a comparative study of office workers' attitudes toward their jobs and opinions as to whether the jobs are mentally or physically fatiguing, and to find out if there is any correlation between these attitudes or the repetitive nature of the work with the workers' like or dislike of their jobs. The questionnaire was circulated among female employees working in different kinds of offices, no attempt being made to choose any particular type, except to exclude those holding supervisory positions.

Method of scoring in order to get a measure of relative preference for variety in daily life

Alternating with the questions which determine the workers' attitude toward the job, were questions included to measure the workers' "susceptibility to monotony," or preference for variety in daily life. In order to understand what is referred to in this analysis as the "susceptibility score, a brief explanation of the calculation of these

1. See pages 147-148 infra for a copy of the questionnaire.

scores is essential.

Questions 1, 5, 7, 9, 11, 13, 15 and 17 were included to attempt to get some numerical measure of the individual's preference for variety or uniformity in everyday life. The method of scoring is as follows:

Questions 1, 5, and 15 - one point for each item underscored. (Questionnaires were edited to exclude any duplication, e.g. some included the same sport under both "sports" and "hobbies".)

Question 7. Yes - 0 No - 1 point

Question 9. Always - 0. Often - 3. Seldom - 6.

Question 11. Almost always - 0. Frequently - 3. Seldom - 6.

Question 13. One or two people - 0.
Three to six different people - 3
More than six different people - 6.

Question 17. Usually - 0. Seldom - 3.
Almost never - 6.

The weighting of the above answers was decided upon after experimenting with a group of 31 of the replies using some different numerical weights. The ones selected gave a wide total score range and also resulted in the median and arithmetic average for the group being approximately the same.

Total scores for the whole number tested ranged from seven to forty-five, but for the sake of simplicity and clarity in interpreting the scores as a measure of susceptibility to monotony, the scores as tabulated in this analysis are expressed as plus or minus deviation from the median. A large minus deviation therefore indicates little

variety or slight susceptibility to monotony, while a large plus deviation indicates varied interests, desire for variety and probably great susceptibility to (or dislike for) monotony. The individual susceptibility scores on this basis range from -17 to plus 21 for the entire group, 0 representing the median.

Analysis by Job Classification

Since it is to be expected that the kind of work performed would have some bearing on the general opinion of the worker with respect to monotony, fatigue, etc., the questionnaires were divided into three groups as follows:

Group I - Jobs characterized by variety of task, involving some use of machines (such as secretaries and general office workers)

Group II - Jobs having little variety and all involving machine work (stenographers, typists, office machine operators)

Group III- Jobs involving homogeneous mental work (accountants, bookkeepers, and clerks)

The following table summarizes in comparative form the results of scoring those questions, which indicate variation for the different groups, and also gives figures for the breakdown of each group between those who "like" and those who "dislike" their jobs.

Table 1

	Number of Cases	Number who consider job Monotonous	Fatiguing Mentally	Fatiguing Physically	Group Susceptibility Scores *
Group I					
Like	45	1 (2%)	19 (42%)	6 (13%)	+ 2
Dislike	1	1 (100%)	1 (100%)	0	+ 1
Total	46	2 (4%)	20 (44%)	6 (13%)	+ 2
Group II					
Like	23	8 (34%)	10 (43%)	10 (43%)	-4
Dislike	9	9 (100%)	4 (44%)	3 (33%)	-1
Total	32	17 (53%)	14 (44%)	13 (41%)	-4
Group III					
Like	35	3 (9%)	16 (46%)	7 (20%)	0
Dislike	9	9 (100%)	6 (67%)	1 (11%)	+ 1
Total	44	12 (27%)	22 (50%)	8 (18%)	0
Total -All Groups					
Like	103	12 (11%)	45 (44%)	23 (22%)	0
Dislike	19	19 (100%)	11 (58%)	4 (21%)	+ 2
Total	122	31 (25%)	56 (46%)	27 (22%)	0

From this tabulation of results the following conclusions may be drawn:

(1) Boredom or feeling of monotony is 100% present in the case of all employees who dislike their job, and present to a very small degree in the total of those who like their work.

(2) Mental fatigue shows a somewhat higher percentage in all groups for those who dislike their jobs as compared to those who are satisfied.

(3) Physical fatigue for all groups is considerably lower for those who dislike their jobs, which indicates that

*Average deviation from median of each group or sub-group.

this factor is probably not significant in like or dislike of the job.

(4) Comparing the susceptibility scores for Groups I, II and III, would indicate that people tend to choose work with the degree of variety they prefer in daily life. The score for Group I, for instance, is + 2, this group being composed of those with the more varied tasks. Group II, comprising the homogeneous tasks involving use of machines, has a -4 score, while Group III average shows no deviation from the total.

(5) In Groups II and III the people who dislike their work have a susceptibility score above both the median for the total and the score for their own group. In Group I the one person who dislikes her job has a score above the group median but below the total score median, but since only one case is involved this would not give a significant comparison.

(6) As would be expected, Group II shows the highest percentage for physical fatigue, and Group III the highest percentage for mental fatigue.

With respect to the relationship between monotony and mental fatigue the following figures tabulated from the results of the same questionnaires may be significant:

Table 2

	Total	Number who consider their work: Monotonous but not mentally fatiguing	Mentally fatiguing but not Monotonous	Both
Group I	21	1	19	1
Group II	26	12	9	5
Group III	27	5	15	7
Total	74	18	43	13

The above results might indicate that the majority of the workers do not consciously or unconsciously feel that the two things are related, but of course there might be other factors entering into each individual case. The most we can deduce from this is that there is no tendency toward correlation of the two factors subjectively.

The preference of individuals for more difficult or more varied work shows less variation between groups, except for those variations which would be expected due to the nature of the work. The following table summarizes these results for comparative purposes, giving percentage figures only. The wording of the questions (See Questions 19 and 20)[1] is significant as it merely indicates the employees preference <u>if necessary</u> for them to change jobs or kind of work.

1. Page 148 <u>infra</u>.

Table 3

	Number of Cases	Preference as to difficulty of job			Preference as to variety of job		
		% More	% Same	% Less	% More	% Same	% Less
Group I							
Like	45	26%	67%	4%	33%	64%	2%
Dislike	1	-	-	100%	-	100%	-
Total	46	26%	67%	7%	33%	66%	1%
Group II							
Like	23	30%	60%	10%	66%	34%	-
Dislike	9	56%	22%	22%	89%	11%	-
Total	32	38%	50%	12%	72%	28%	-
Group III							
Like	35	32%	65%	4%	51%	46%	3%
Dislike	9	67%	22%	11%	78%	22%	-
Total	44	39%	54%	7%	57%	41%	2%
Total							
Like	103	29%	66%	5%	46%	52%	2%
Dislike	19	58%	21%	21%	79%	21%	-
Total	122	33%	59%	8%	50%	49%	1%

The significant thing about the above table is that it points to variety as a desirable feature, particularly in Group II where 89% of those who dislike their jobs would prefer more varied work and 66% of those who like their work would prefer more varied work. The 33% total for Group I is not surprising since this Group includes girls who are doing more varied work anyway. In Group III,78% of those who dislike their work would prefer more variety. This would seem to indicate that the majority of office workers prefer varied to repetitive work.

Table 3

	Number of Cases	Preference as to difficulty of job			Preference as to variety of job		
		More	Same	Less	More	Same	Less
		%	%	%	%	%	%
Group I							
Like	45	86%	82%	4%	33%	64%	3%
Dislike	1	-	-	100%	-	100%	-
Total	46	86%	87%	7%	33%	66%	1%
Group II							
Like	33	30%	80%	10%	85%	94%	-
Dislike	9	88%	66%	22%	89%	11%	-
Total	42	38%	86%	12%	76%	89%	-
Group III							
Like	30	32%	86%	4%	81%	46%	3%
Dislike	9	67%	29%	11%	78%	22%	-
Total	44	38%	84%	7%	87%	41%	2%
Total							
Like	103	29%	86%	5%	46%	86%	2%
Dislike	19	58%	81%	21%	79%	21%	-
Total	129	35%	85%	8%	60%	49%	1%

The significant thing about the above table is that it points to variety as a desirable feature, particularly in Group II where 89% of those who dislike their jobs would prefer more varied work and 86% of those who like their work would prefer more varied work. The 35% total for Group I is not surprising since this Group includes girls who are doing more varied work anyway. In Group III,78% of those who dislike their work would prefer more variety. This would seem to indicate that the majority of office workers prefer varied to repetitive work.

In Groups II and III it is apparent that the girls who dislike their work desire more difficult work, these percentages being 56% and 67% respectively, as compared to 30% and 32% for the satisfied workers. Of course this may only indicate that a large percentage are doing work not comparable with their intelligence.

Effect of Age

In order to determine whether age might have some effect on the results obtained in the job groups, the total number of questionnaires were rearranged in age groups and results are shown in the following table. Comparison of the group percentages with total percentages (in right-hand column) will give some indication of how age of the workers might affect results of the questionnaire when applied to homogeneous job groups composed of workers of varying ages.

Table 4

	Age Groups			
	Under 25	25-35	Over 35	Total
Number of cases	74	32	16	122
Number who consider job monotonous	20 (27%)	7(22%)	4(25%)	31(25%)
Number who consider mentally fatiguing	40 (54%)	11(33%)	5(31%)	56(46%)
Number who consider physically fatiguing	13 (18%)	7(22%)	7(44%)	27(22%)
Susceptibility Score	+ .5	-2	0	0
Number who dislike job	14 (18.9%)	3(9.4%)	2(12.5%)	19(16%)

From this classification by age groups we note the following facts:

(1) The younger group exceed the other groups in susceptibility to monotony, in feeling that their work is monotonous and mentally fatiguing, and in disliking jobs. They are below average only in feeling physically fatigued.

(2) The over-35 group shows 44% feeling physical fatigue and 31% showing mental fatigue, the former being well above the overall average and the latter considerably below the average.

(3) Of decided significance in the foregoing table is the comparison of the susceptibility score and the percentage who dislike jobs, proving this correlation to exist in the age grouping as well as in the job grouping shown in Table 1.

Summary and Conclusions

From the results of this questionnaire there are two very definite conclusions which can be drawn: first, that there exists something which tends to make office workers believe they are "fatigued" and that this is the direct result of the work performed. The results of the questionnaires as tabulated in all the foregoing tables point to this conclusion. Some psychologists contend that there is no such thing as mental fatigue - that whatever seems to be is merely boredom. Tables 1 and 2 show that a large percentage of workers seem to differentiate between boredom or monotony and fatigue.

Whether this is due to the inability of the individual to distinguish between fatigue and boredom can still be a subject for debate and experimentation.

The second conclusion is that boredom is probably the most important factor in dislike of one's job since it is present 100% in the case of all those who state that they dislike their work. Only 11% of the total who like their jobs consider them monotonous; the replies to the questionnaires indicate pretty clearly that some people prefer work with little variety, but they are in the minority when considering the group as a whole.

There are several other conclusions toward which the results of the questionnaire point, but which cannot be claimed as definite because of lack of sufficient number of cases under uniform conditions. These indications are as follows:

(1) There is a rather general tendency of the majority to prefer more varied work, particularly if the present jobs are of the homogeneous type. This is shown in Tables 3.

(2) There is probably a definite plus correlation between the individual's preference for variety in everyday life and desire for variety in work. Although the scores used for "susceptibility to monotony," intended to measure the degree of dislike for uniformity in the working situation, are arrived at by arbitrary weighting of the questions, the

results tend without exception to show this correlation. This is brought out particularly by two facts: first, the scores of the job-group classifications are minus for the uniform task group (Group II) and plus for the varied tasks (Group I). Secondly, the scores for the two sub-groups who dislike their jobs are higher than for the group to which they belong. These facts are apparent from Table 1.

The effect of age as brought out in Table 4 is significant and indicates that the age of the individuals used as cases would have to be taken into consideration if any comparison were attempted between special groups. In this study since the various ages are spread throughout the different job classifications, age would not affect the comparative relationships between factors.

It is difficult to obtain an absolute numerical score for such a purely subjective characteristic as susceptibility to monotony, but if the existence and degree of such a characteristic can be determined by some means in order to avoid placing the individual with a high susceptibility score in a uniform job it might lead to more effective placement of office personnel.

Questionnaire[1]

You are asked to cooperate in an investigation on the subject of "office fatigue" in connection with a course in Business Psychology at Boston University, College of Business Administration. Please answer the following questions. No names required.

Data:

State specific kind of office work you now do_____
(i.e. clerk, typist, bookkeeper, general office, stenographer, billing machine operator, etc.)

Sex: Male___ Female____ How long in present job_____

Age: Under 25____ 25-35_____ Over 35____

No. of hours in work week:____hrs. Length of lunch period____

Questions: (Answer all except 1, 5 and 15 by check mark)

1. Underscore the kinds of entertainment you like: (as a spectator) movies, theatres, concerts, opera, symphony, art exhibits, lectures, athletic meets, wrestling matches, boxing matches, skating exhibits, tennis matches, football games, baseball games, hockey games, horse races, dog races.
   Underscore the kinds of social functions you enjoy: dances, teas, card parties, cocktail parties

2. Do you like your job? Yes____ No_____

3. How often do you attend moving pictures? Never___
   Less than once a week _____
   Once or twice a week _____
   More than twice a week _____

4. If offered another job, would increased pay be the deciding factor in your acceptance? Yes____No_____

5. In what sports do you take part? List them _____
   _____
   _____

6. Does fatigue from your work prevent you from engaging in sports or enjoying other kinds of recreation which you would like? Yes___No_____

7. Do you take exactly the same route from home to work each morning? Yes___No_____

---

1. Questionnaire prepared by Lillian G. Guard, in March, 1946.

Questionnaire (continued)

8. What is the average number of hours you sleep?
   Less than 6 hrs._____
   6-7 hrs._____
   7-8 hrs._____
   More than 8 hrs._____

9. Do you tend to select the same menu for breakfast each morning? Always _____
   Often_____
   Seldom_____

10. Would you prefer a longer noon hour? Yes___ No_____

11. In the course of a week are you likely to select the same restaurant? Almost always_____
    Frequently_____
    Seldom_____

12. Do you think you would work more efficiently if the number of working hours were decreased? Yes__No__

13. In the course of a week or two do you spend your free time with-- one or two people_____ _____
    Three to six different people_____
    more than six different people_____
    (this does not necessarily mean at the same time)

14. Do you consider your work monotonous? Yes___No_____

15. How many hobbies have you? List them_____
    _____
    _____

16. Do you consider your work mentally fatiguing? Yes__No__
    Do you consider your work physically fatiguing?Yes__No_

17. Do you tend to do practically the same things every Sunday? Usually_____
    Seldom_____
    Almost never____

18. Do you consider your work difficult? Yes____ No_____

19. If you had to change your job, would you try to choose one which would be--
    more difficult_____
    same degree of difficulty___
    less difficult_____

20. If you had to select a different kind of work would you prefer something -- more varied _____
    same degree of variety_____
    less varied_____

APPENDIX C

(A copy of mimeographed material used at the training school for Supervisors, Remington Rand Tabulating Machines Institute)

THE REMINGTON RAND TABULATING MACHINES INSTITUTE
1808 ADAMS MILL ROAD, N. W.
WASHINGTON 9, D. C.

OPERATOR TRAINING METHODS

There are two broad classifications in instructing a worker in a particular operation. The first might be called "How to Get Ready To Instruct" - and the second, "How To Instruct". This is pointed out because the success or failure in teaching a worker a new operation hinges as much on the preparation made by the instructor as it does on the actual instruction.

How To Get Ready To Instruct

Have a Time Table: It is important to have a specific Time Table when preparing to teaeh a worker a new operation. Many elements will affect this. Basically there is a certain minimum of time required to learn a given job. Another important factor is the length of time available to train the worker - particularly if he is being trained as a replacement.

It is very easy to become involved in one or two points while instructing and lose sight of the balance of the work. In other words, this time schedule isnecessary to assure completion of instruction at the desired time. It is recommended that instruction be scheduled to ¼ day periods. As the instruction progresses it will be easy to determine whether the instruction will be completed at the anticipated time.

Break down the job; In making a time schedule for instructing it will be found helpful to break down the job to be presented. This can best be done by first listing the principal steps in the job. In analyzing any job, it will be found that there are well defined steps between the time the job is started and completed. Do not have too many breakdowns, but rather confine the breakdown to the major operations.

Pick out the key points: These key points will more or less serve as landmarks as you go through the instructing process. Primarily, in the case of machine operation, it will involve machine operating features. Comparable key points can be selected, however, in any type of job. The key points that have been selected are the ideas which should be constantly repeated during instruction, inasmuch as they represent the factors which will enable the worker to learn more quicly.

Have everything ready: It is important that before starting to instruct that the right equipment, materials and supplies are available. Plan so that everything will be available at the right moment.

Have the work place properly arranged: The work area should be arranged exactly as the worker will perform the job after he has learned all the steps involved. It is better to instill proper habits while learning than to have to correct erroneous habits at a later date. Be sure that the worker understands the proper location and condition of every working tool he will use in his job.

How to Instruct

Step 1: Prepare the worker for the job he is to do. Put him at east by making a clear explanation of the simplicity of the job to be done. Find out what the worker already knows about the specific job. Often times a worker will have previous experience or knowledge with which you are not familiar. By capitalizing on this, the job of instructing will be easier as well as the task of learning the operations. Next, get the worker interested in learning the new job. By creating enthusiasm for the new task, the time involved in accomplishing the necessary instruction will be much shorter. Once more be sure that everything is placed correctly so that the worker starts under the right conditions.

Step 2: Present the operation by telling, showing and illustrating carefully and patiently each operation. In other words, make a thorough demonstration of each step in the job. At the same time, ask questions to insure that the worker comprehends each point presented. At this time, stress the key points completely taking up one point at a time but never more than can be mastered at one time by the worker. If properly presented, each operation is predicated by knowledge of the previous operation. Therefore, it is important that each step is completely mastered before progressing to the next.

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How to Instruct

Step 1: Prepare the worker for the job he is to do. Put him at ease by making a clear explanation of the simplicity of the job to be done. Find out what the worker already knows about the specific job. Often times a worker will have previous experience or knowledge with which you are not familiar. By capitalizing on this, the job of instructing will be easier as well as the task of learning the operations. Next, get the worker interested in learning the new job. By creating enthusiasm for the new task, the time involved in accomplishing the necessary instruction will be much shorter. Once more be sure that everything is placed correctly so that the worker starts under the right conditions.

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Step 3: Try out the performance of the worker and test him by having him perform each operation. Have him tell and show in the same manner as presented each operation in detail. Request the worker to explain back the key points that have been emphasized. At this point, it is advisable to ask questions and correct any misconceived ideas before they become a habit. Continue in this manner until it is apparent that the worker knows each operation properly.

Step 4: Follow up with the worker. Be sure that he knows to whom he goes for help when he is in doubt. Nothing can be more serious than having one worker ask another and get the wrong answer. Check his performance frequently and be sure that he is doing the job properly. At all times encourage questions and have him look for the key points as he progresses. Finally, taper off the extra coaching until the worker can perform the job without any assistance. At this point close the follow-up entirely, starting the worker on the normal job, with the normal supervision.

"If the worker hasn't learned - the instructor hasn't taught."

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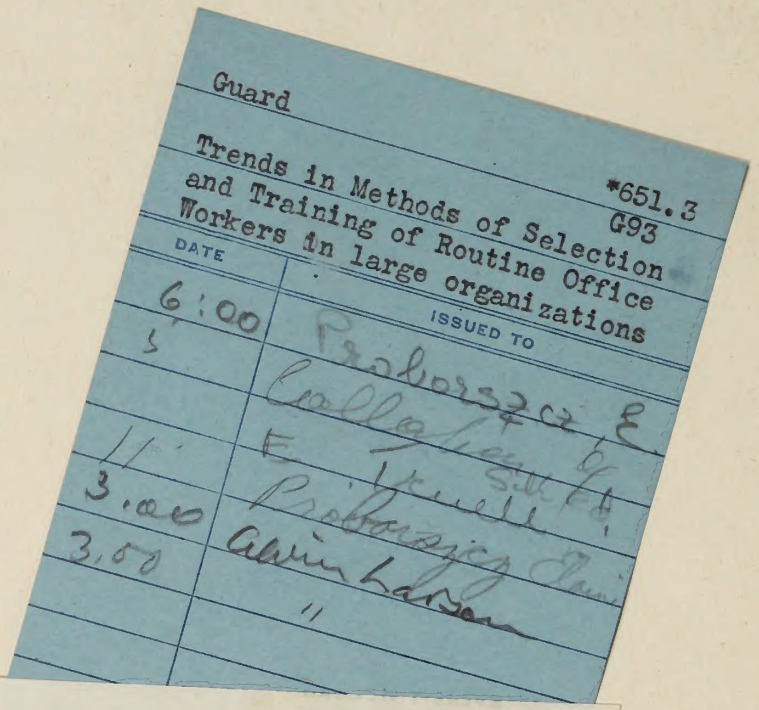

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